

college **AND UNIVERSITY** **business**

FEBRUARY 1960

Functions of Management

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Sound Purchasing

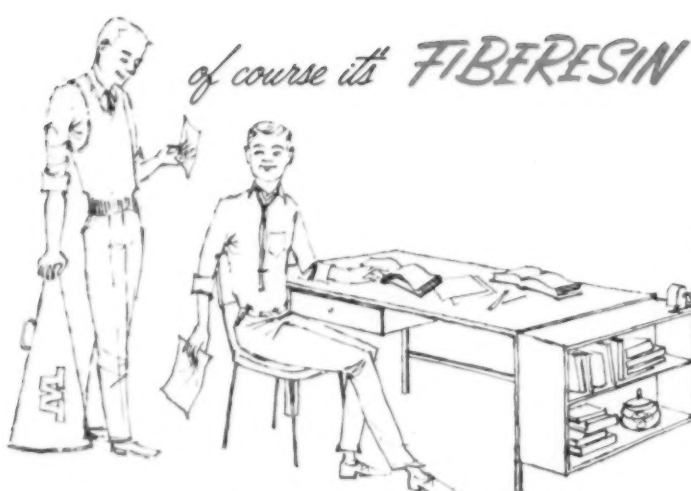
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DOOR TO WESTERN HISTORY SECTION OF LIBRARY, UNIVERSITY OF WYOMING (p. 38)





the original solid plastic top and panel.

Fiberesin is durable, and especially adaptable to school and institutional use.

School desk tops, educational, and dormitory furniture built with **Fiberesin** can literally be installed and forgotten, as the **Fiberesin** surface and edge completely withstands use and abuse. It has particular resistance to abrasive wear and will never warp or twist out of shape. Tops cannot be "ringed" by wet bottles or glasses — even piping hot, spilled coffee. Burning cigarettes, fruit acids, alcohol, grease, cosmetics, fingernail polish and remover . . . in fact, **Fiberesin** completely resists all ordinary enemies of furniture, including students and their gouging, nicking, trenching, and ball-point doodling.

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b the perfect fiberesin surface

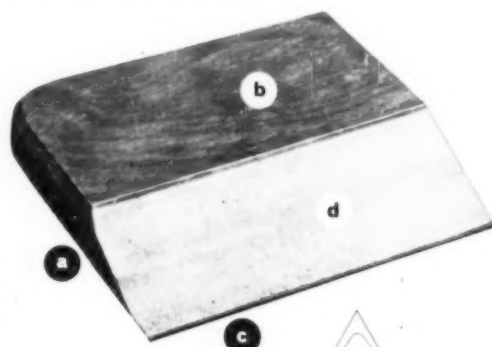
Fiberesin is molded under controlled heat and high pressure against pre-finished press plates . . . there is no possibility of surface irregularities, glue lines, "telegraphing" grain patterns, or high spots. No ripples or shadows mar the appearance of **Fiberesin**. The molded-in surface finish has the soft, satin effect of fine furniture.

c identical surfaces

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d "one piece" from face to face

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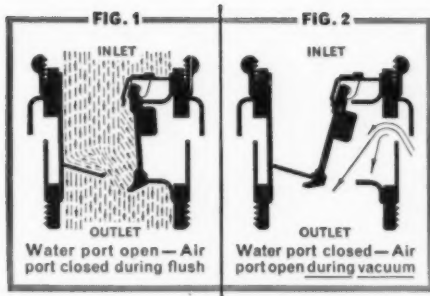


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AMONG THE AUTHORS: Eugene Cohen, vice president and treasurer, University of Miami, describes a new system of reporting gifts and grants, which he regards as a primary administration responsibility . . . Paul Nestor, purchasing agent of the University of Kentucky, has lectured several years on the principles of proper college purchasing before students of the college business management workshop held each summer at the University of Kentucky. Prior to his appointment at the University of Kentucky he was a member of the administrative staff at Berea College . . . Christine Pensinger, food service consultant, points out the importance of advance planning in negotiations with architects. She has appeared as a lecturer at the Food Service Institute, cooperatively sponsored by COLLEGE AND UNIVERSITY BUSINESS, Northwestern University, and the University of Chicago.



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QUESTIONS AND ANSWERS

Purchasing Foodstuffs

Question: Is there any reason why it is better for purchasing of foodstuffs to be done by the purchasing agent instead of the food service director? — B.L., Ohio.

ANSWER: The purchasing agent should buy food, using the same principles that would apply to the purchase of any other commodity. His primary interest is in the preparation of specifications, the definition of required qualities, the obtaining of competitive prices, the combining of quantities to obtain better volume prices, and the standardization of items wherever possible.

The primary concern of the food service director and the staff under him is the important and time consuming job of kitchen production and the dining room service of the finished product to the customer. By centralizing and specializing the food purchasing function, the food service staff is relieved to concentrate on its fundamental job of production. The related purchasing problems of phone calls to numerous vendors, of location of special products, of follow-up and control of delivery as required, and of necessary adjustment of invoices can be most effectively handled by a purchasing staff that is specializing in this function.

The purchasing of food requires a specialist, one who preferably has had some experience in the handling and processing of food. It requires a continuing and concentrated study of market conditions and of the new and various products available.

Frequently, a campus has multiple independent feeding units, such as men's residence halls, women's residence halls, and student union operations. In such cases there is further need for the centralizing of food purchasing, so that the quantity advantages can be obtained.

If you have a question on business or departmental administration that you would like to have answered, send your query to COLLEGE and UNIVERSITY BUSINESS, 919 North Michigan Avenue, Chicago 11, Ill.

In many smaller schools, the food service director is responsible for the purchasing. Frequently, however, all advantages of quantity buying, of specialized market study and evaluation, and of application of purchasing skills are lost by each food supervisor doing his own buying.

As with the purchase of any other commodity, the purchasing department must work closely with the food service director and the supervisors under him. Only in this way can proper evaluation be made of the needs and the products being used. — D. F. FINN, purchasing agent, Purdue University.

Full-Time Safety Director

Question: How large should an institution be before it can justify the appointment of a full-time director of campus safety? — R.K., Fla.

ANSWER: A college or university employing a thousand persons or having 2500 students could economically justify an administrative safety position. However, the larger the numbers involved, the simpler the economics of safety. Most of the full-time safety administrator positions now are in the large universities. CalTech, with an enrollment of 1300, is a notable exception.

A more important indication than the sheer weight of numbers of students, faculty and staff, however, is actual and potential losses from accidents, injuries and fires. Such losses, if totaled over a 10 year period, throwing in the cost of workmen's compensation losses, public liability, and other insurance coverages, and including also a substantial overriding for the uninsured costs of all types of loss and of fires, will give a figure in the millions of dollars for larger universities and in hundreds of thousands for colleges of moderate size. A substantial part of a college safety effort is directed toward the reduction and control of such losses.

For a college that has just lost its library to fire, paid out \$50,000 on some public liability claim, or poured another \$100,000 into workmen's compensation funds, the desirability of a planned safety program should be apparent.

(Continued on Page 6)

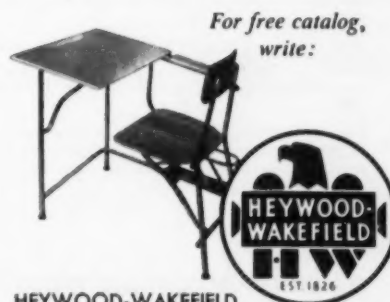
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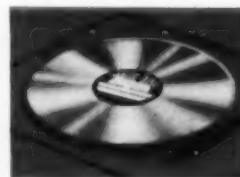
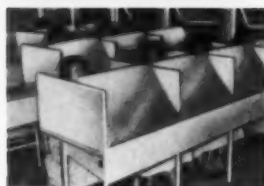
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(Continued From Page 4)

parent. Some of our better campus safety programs have been precipitated by costly shock losses, such as serious fires or accidents.

Added to the monetary aspect is the moral obligation of the institution for providing safe living and learning for its students and staff, and for the general public. For a college of even moderate size — one with an enrollment of 4000 — this becomes a full-time function, if properly carried out.

Administrators who have studied the loss figures for any extended period realize that workmen's compensation rates, and therefore losses, are progressively increasing, that settlements in both compensation and public liability fields are becoming more and more liberal, and the trend is progressively toward more and more liberal interpretation of the responsibility of the college toward the general public, as Dr. Thomas E. Blackwell's articles on legal matters in *COLLEGE and UNIVERSITY BUSINESS* have shown. For these reasons and a number of others, it is not easy to find valid arguments against a planned safety program for even a small college.

To amplify my original answer, I think a fair estimate might be: "For engineering and technical schools, an enrollment of 1000 students; for liberal arts colleges, 2000 students; for universities, 5000 students." — JOHN MORRIS, safety coordinator, University of Illinois.

Custodial Work Standards

Question: Have any standards been established for custodial services in regard to how many square feet of building space a custodian should be expected to clean on a daily schedule? — B. F., Ohio.

ANSWER: The National Association of Physical Plant Administrators has never agreed on standards for custodial services in regard to how many square feet of building space a custodian should be expected to clean on a daily schedule. There are so many variables involved that the problem is complex.

The Gilbert Formula compiled by F. L. Gilbert of Jackson-Cross Company, Philadelphia, is an attempt to determine by means of work units an equitable distribution of area to be cleaned. This may be a good point of departure for working out your own formula. — JOHN SEITZER, superintendent of buildings and grounds, Earlham College.

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Utica College of Syracuse University, Utica, New York; Architects: Egbert Bagg Associates, Utica, N. Y.; Perkins & Will, Chicago, Ill.; Engineer: Egbert Bagg Associates, Utica, N. Y.; Owner: Utica College Foundation, Inc.

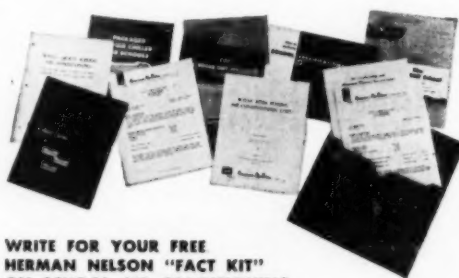
● These beautiful new buildings at Utica College are equipped with HerNel-Cool unit ventilators — and "now or later" air conditioning. Why? Simply because the cost of this equipment is in the same range as equipment *not adaptable* to air conditioning.

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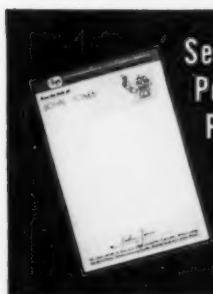
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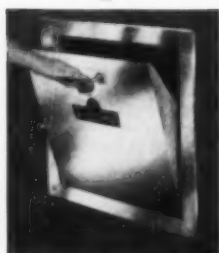


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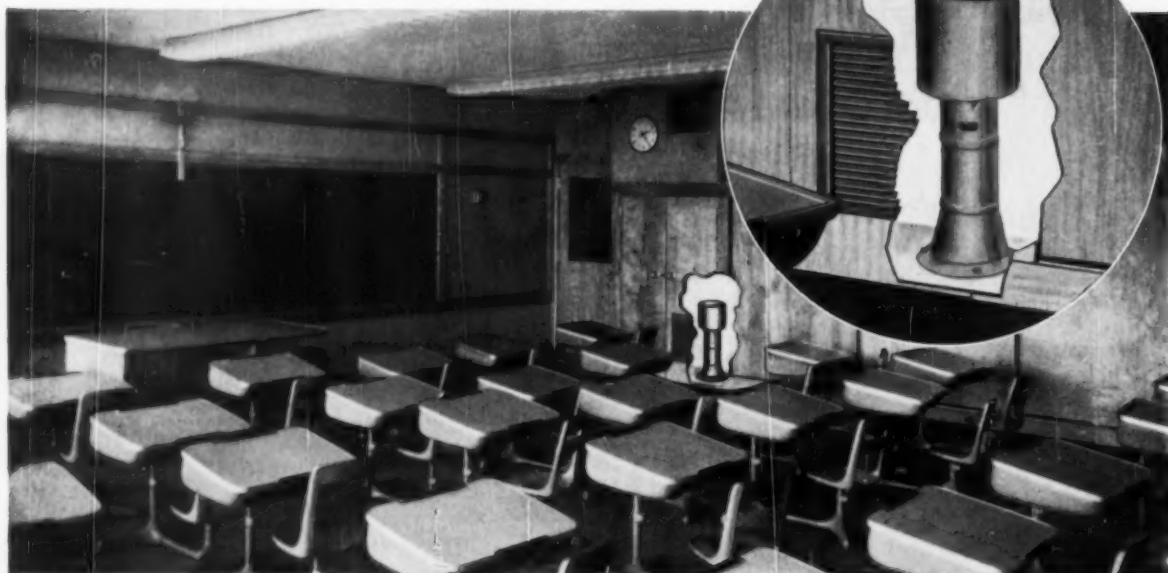
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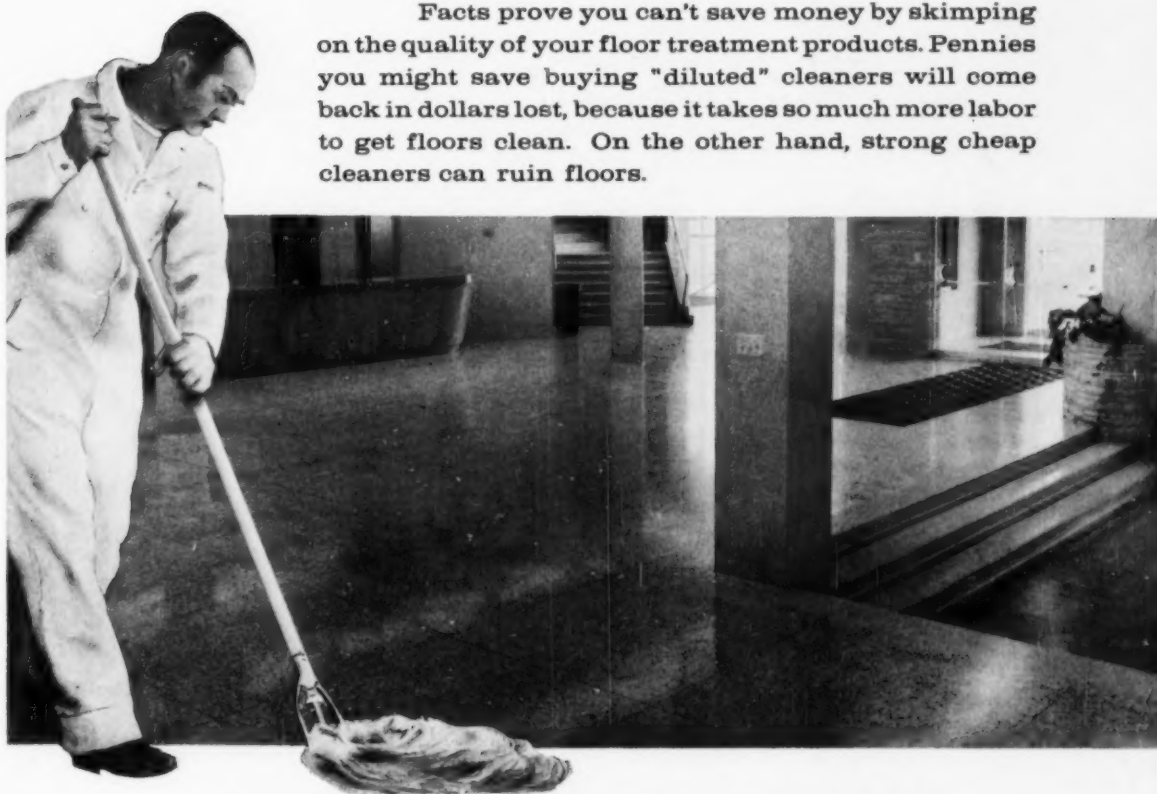
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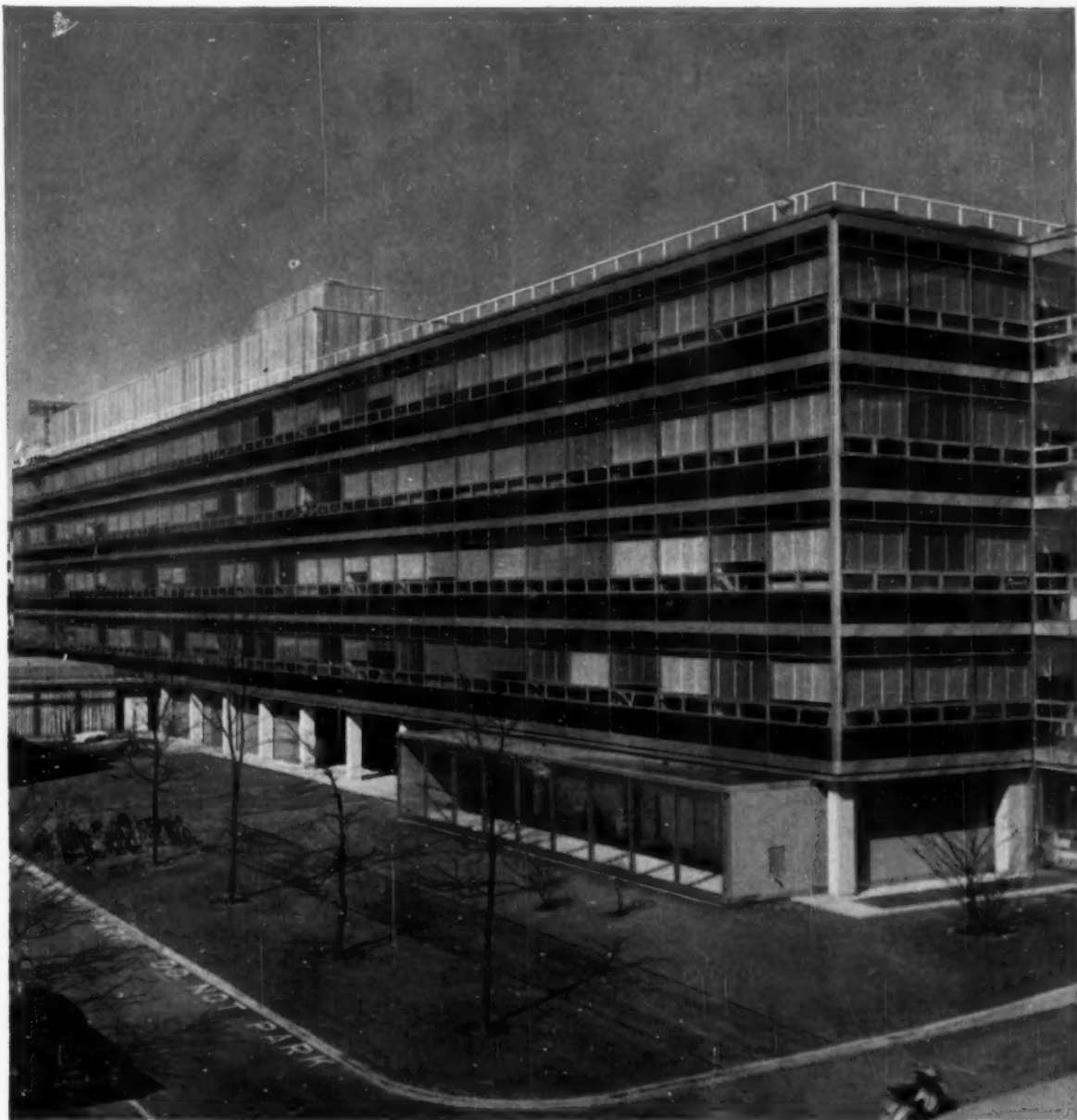
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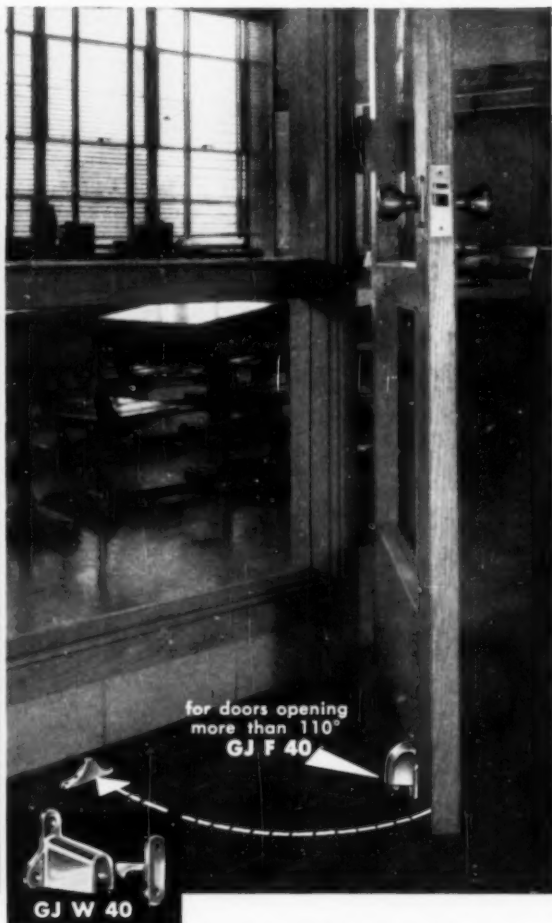
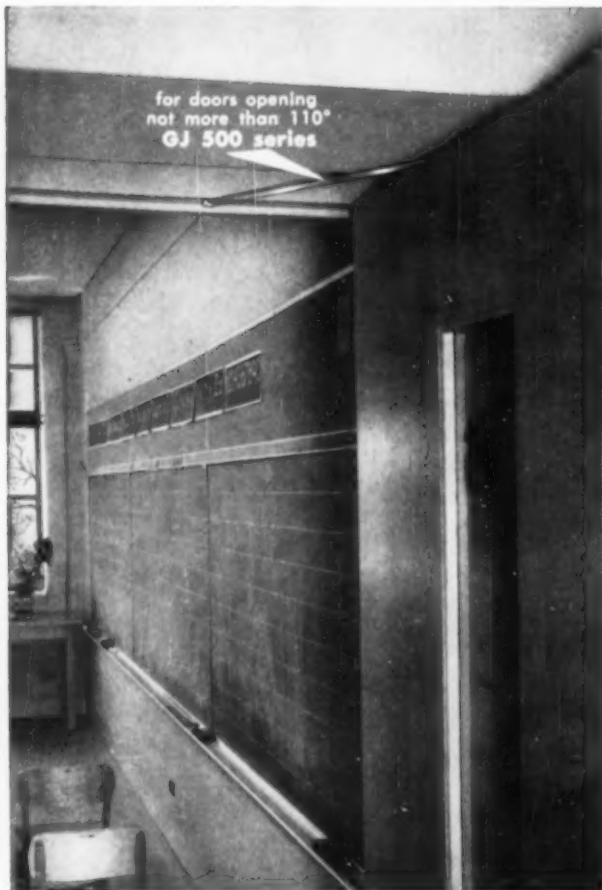
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Faculty Participation in Administration

GEORGE W. STARCHER

President, University of North Dakota, Grand Forks



GOOD university administration requires planning for the future, good order, and procedures based upon student and faculty cooperation. There is need for leadership at all levels for we shall always have disagreement, compromise, negotiation and adjustments of legitimate differences in the university, as in every human group.

A university thrives in an atmosphere of controversy for only through diversity and the clash of viewpoints can true learning and the advancement of knowledge take place. Participation of the faculty in management is a matter of such importance that faculty members and administrators alike might well take a new look at the role of the faculty in its own self-government.

Academic freedom has become much more than just freedom of opinion about subject matter. We now believe that it includes a high degree of faculty participation in decision making — even faculty studies and research on institutional problems that provide more intelligent bases for the determination of policy. As colleges and universities become increasingly complex it becomes more and more important for faculty members and administrators to recognize the importance of maintaining the formal organizational structure of the institution, without which no university could long operate, while at the same time preserving the spirit of individuality and independence of thought and action characteristic of the specialist scholar and teacher.

If faculty members display less hostility now toward so-called "administration" than they once did, it is not because they are becoming less "intellectual" but rather because they are more concerned about understanding the requirements of getting the job done. The flagrant abuse of power and the arbitrary exercise of authority by boards and administrative officers in our colleges and universities are matters of the past. The primary importance of the work of the individual teacher, and the necessity that all those concerned maintain a universitywide point of view, requires that boards and administrators seek the help of the faculty. Whereas formerly when the group was small the entire faculty, or a faculty committee, had time to consider the most

minute details, including administering the final examination for every graduating senior, now it is becoming more and more important that all concerned seriously strive to distinguish between important things, which generally belong in the realm of ideas, and matters of less importance, which have to do with procedures or with matters of opinion.

As members of the teaching faculty find ways more effectively to perform their self-governing role, they will concern themselves increasingly with broad general policy decisions, routines and procedures that fix responsibility and delegate authority to others for making day-to-day decisions. All of this will be done in a spirit of teamwork and balance so that decisions are made from a universitywide point of view, without the importance of personal and individual motives being ignored. Only thus can a college or university be built upon a foundation of common loyalties rather than upon servility. Faculty members are responsible to the standards of their profession, and they work for the social ends prescribed for their profession.

The broader and accepted purposes of the institution are beyond ignoring either by the teacher or by the administrator. Every teacher and every administrator must, first of all, be dedicated to the defense of the very structure of the institution which seeks to preserve his academic freedom. To do otherwise is to fail in his responsibility to his profession as well as to the university. However, this does not mean that there should be no effort to change and improve. In the days ahead we must improve the formal organization and modify procedures to keep abreast of advancing knowledge about human organization and to facilitate handling larger numbers with increasing efficiency. New methods of communication and of control within the organization, as well as new mechanical devices, all have a part in modifying college and university administration.

A stable society based upon the concept of free enterprise is best served by institutions of learning that have developed patterns of cooperation. If we lose academic freedom in this sense, then our cherished freedom of enterprise in every other sense will be lost.

LOOKING FORWARD

A Good Idea

AT THE University of North Dakota efforts have been made to bring high schools and the university into better understanding by means of a high school-university conference. By working more closely with the high schools, the university believes that students will be better prepared for their college experience.

Officials from every high school in the region that had more than three graduates in the university's freshman class were invited to the conference. Each principal or superintendent had three consultation periods with the graduates of his high school. In these sessions he found out what his schools did or did not accomplish in preparing students for college. After the interviews, the visitors reconvened to discuss how the university program was meeting the needs of their former students.

Included in the North Dakota conference were explanations of the university's testing, counseling and guidance services for freshmen, and also information on prerequisites in mathematics, English and science. At the conclusion of the conference, the school administrators had an opportunity to tell the university officials what they had learned from the students.

The conference was scheduled at the end of the second grading period so that the school administrators could learn how their high school graduates were doing in classes.

The closer integration of high school and university objectives should profit both parties. American education cannot afford waste, and these evidences of cooperation augur well for an improvement in educational performance.

Education Gets Top Billing

ACCORDING to a recent Gallup opinion poll, which was reported in the Jan. 5, 1960, issue of *Look Magazine*, more than half of the American people regard education as the most important requisite for achieving success in life.

The disturbing factor in the survey results was that education was tapped for top honors for the wrong reason. American parents, according to the poll, strive to "send the kids to college because it will make life easier for them" rather than to stretch or to enrich their minds.

Apparently the American parent wants success the easy way, and considers a college education the password. Commenting on this, the report states that "hard work, long considered to be the American success formula, comes off a poor second in the survey, with only a quarter of the people thinking that it matters most. Honesty gets even

less consideration: Ten per cent of the people 50 years old and older cite it as the most essential for success, but only 6 per cent of America's young adults and 4 per cent of teen-agers pay it similar homage."

Half the battle for support is won if the American people actually feel as favorable toward education as this poll would indicate they do. It behooves educational administration, however, so to improve its product that the prime concern will be what education does to a person rather than what it does for him. If not, education will become part of a success cult — and will ultimately be exposed for its superficiality and lack of substance.

One by-product of the interest in education is the increase in total giving to education, according to a recent report of the American Association of Fund-Raising Counsel, Inc. "More than \$1 billion in total gifts to education was made in 1959. The increase in educational giving is greater than in any other classification of philanthropy . . . with gains in alumni giving of 34.9 per cent as reported by the American Alumni Council, and gains of 23.5 per cent in corporate giving reported by the Council for Financial Aid to Education."

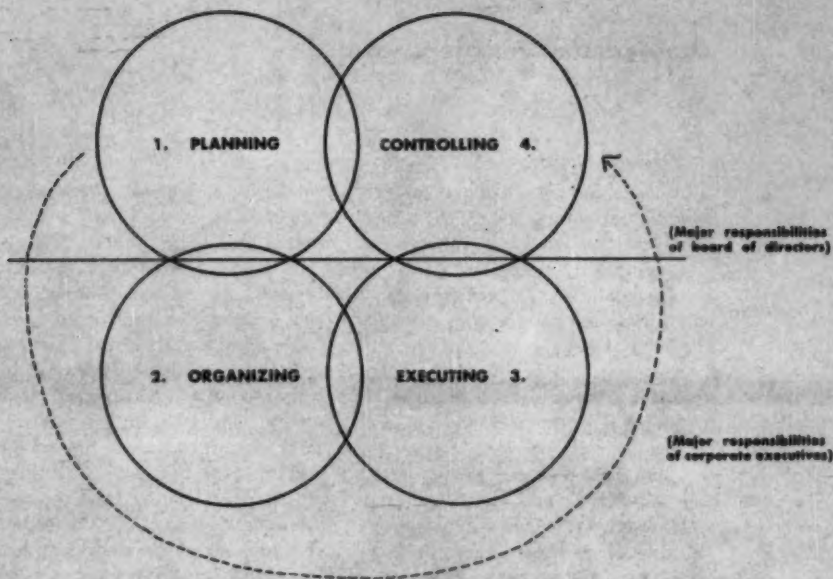
Education has made a favorable impression on the American public. Alert administrators are capitalizing on this interest.

People in Glass Houses

A FRIEND of ours was attending a meeting at the University of Chicago not long ago and strolled across the Midway one morning to inspect Saarinen's new Law School Building. "From a distance, it looked great," he reported, commenting especially on the glass tower that houses the law library and is unquestionably the arresting center of attention among all the new university buildings grouped on the south side of the Midway.

Skirting Saarinen's reflecting pool (known to local wits as Lake Levi, in honor of Law School Dean Edward Levi), our friend took another look at the tower. "From up close, all you can see is the backs of the bookcases, filing cabinets, desks and chairs that are shoved up against the glass walls," he said. "It looks awful."

So it does, and so does many another glass tower whose occupants keep on living in new buildings the way they lived in old buildings. We didn't have a tidy answer to our friend's question: "What should an architect do about the backs of bookcases, filing cabinets, desks and chairs?" Or the next question: What should an architect do about people who live in glass towers?



MANAGEMENT FUNCTIONS

IF YOUR job is to "get work done through other people," you are performing the functions of management. These functions are four: (1) planning, (2) organizing, (3) executing and (4) controlling.

These functions are universally applicable wherever people work together for common goals. In college or hospital administration, in business and industry, in voluntary associations, at all levels of government, and in the military services, the people in charge, the managers, are planning, organizing, executing and controlling.

It will be easier to understand these functions of management and their interrelationships if we conceive of them as four overlapping circles.

Viewed in this cyclical light, *i.e.* by following the arrow in the chart, we see that these functions make up what is also known as the four-phase or four-step *process* of management. This suggests that the steps take place in definite sequence.

This cyclical scheme highlights the division of responsibility between the board of directors and the company's (Cont. on p. 22)

Part 1 of a two-part series by THOMAS R. MASTERSON

Associate Professor of Management
De Paul University, Chicago

executives as it should be. Unfortunately, in the majority of corporations the board does not fulfill its responsibilities properly. It becomes a rubber-stamp board that meets once a year because the law requires it, and at its annual meeting ratifies whatever the officers place before it.

In a well managed company, the board tends to take the long-range point of view, and the executives tend to concentrate on day-to-day operational problems. The circles have been made to overlap to indicate that neither group deals exclusively with either the long or short run, and also to indicate that these functions cannot be completely separated. We can artificially separate them in order to study them more conveniently, but in actual practice they are all going on simultaneously, and they blend imperceptibly into one another.

Planning. Planning is usually defined as "systematic mental effort about the future," or, in a more precisely managerial sense, as "the mental effort that precedes the physical effort." In any administrative situation, a factory, a college, a hospital, a government agency, a charity drive, planning is made up of three steps: (1) forecasting the future and ascertaining a need; (2) ascertaining what resources are required to fill that need, and (3) making a detailed plan and program to fill the need.

Rhythmic Recurrences

Taking the three steps in order, we know from experience that there are rhythmic recurrences in our natural environment. Spring follows winter, summer follows spring. These rhythmic repetitions in turn cause recurrences in human behavior, which, although less rhythmic, are still to some degree predictable.

Other factors on which we can rely with fair certainty influence the future. We know that our birth rate is rising and our death rate falling. This enables school, hospital and municipal authorities to plan for future needs. Similarly, it enables manufacturers to forecast the size of the various age groups in the population, and thereby to gauge the size of their potential market.

Again, no one expects an end in the near future to the "cold war," since most observers believe that the internal situation in Russia forces its leaders to focus the people's attention on the so-called external "threat" to Russia. Consequently, we can predict continuing high levels of defense spending. From this we can also deduce a continuation of heavy emphasis on research and development activity.

Considering all the information available to any college, hospital, public agency, or business manager from a single source, the federal government, we can conclude that, if anything, the factual data on which planning rests constitute an embarrassment of riches.

After we have done all we can to anticipate the future, the second step is to make a painstaking analysis of what resources — human and material — will be required to produce the goods or services for which the need was perceived. This includes ways of raising the required capital. For example, in the public sphere, should revenue bonds be used or taxes? In the private sector of the economy, should it be bonds or stocks? We must also develop a program for getting, training and developing a work force.

As the details of the third phase of planning are worked out, we gradually develop skill in using the "tools of planning," as they are called. That is, we make up *budgets*, to enable us to foresee our sources and needs for funds during the planning period; we develop *policies*, to guide our managers' decisions; we prepare *schedules*, covering everything from the receipt of raw materials to deliveries of finished products, and we establish

standards, to provide predetermined patterns and levels of performance for our people.

As a recent *Monthly Letter* of the Royal Bank of Canada put it: "It has been proved under all conditions of war and peace that people succeed best who form definite ideas of what they are going to do before they start to do it. . . . [Planning] is one way to avoid entropy, which is the tendency of all created things to seek rest, to 'run down.' Planning takes us out of the complacency that accompanies seeing things only as they are, not as they might be. It protects us from thinking that this is the final chapter in our business careers, our personal relationships, or our happiness."

Organizing. Organizing is the "systematic arranging of the available resources to accomplish a task." It is evident that the key word is "systematic," for it tells us that the criterion that differentiates a well organized concern from a poorly organized one is how efficiently it accomplishes its tasks.

Organizing Has Four Phases

The problem of organizing has four phases. The first is the technical, where the efficiency consideration is paramount. The criterion here is the ratio of high output to low input (of materials, energy and money). Viewed in another light, efficiency consists in achieving the optimal balance between and among quality, quantity, time, cost and method. It is usually the bailiwick of the industrial engineer, or, in the office, the systems and procedures man.

The second problem of organizing is usually called "human relations." It is concerned with the psychological aspects of teamwork, or team spirit. A psychologist calls the development of this psychic force within an individual "identification," which means that a worker gradually comes to identify his personal growth and development with that of the company.

Team spirit exists when everyone exhibits mutual trust and confidence. The employee or the manager knows

from experience that the other persons involved will do their jobs satisfactorily. Hence, he is free to concentrate on his own task. The star ball carrier on a football team doesn't wait until his teammates have done their jobs before deciding that it's worth his valuable time to start running. He knows from experience that the others will do their level best; accordingly he starts to run at the earliest possible moment, concentrating singlemindedly on his own job.

Team Spirit Important

Modern life, modern education, modern hospital administration, modern industry and commerce, modern government is teamwork. No one produces anything by himself; the work is done by teams of specialists. Therefore, it is vitally important that team spirit — identification, if you prefer — be developed. This is a responsibility of management.

Quoting Lawrence Appley of the American Management Association: "The best executive today is usually the specialist who has successfully made the transition to generalist." The reason here is that such an executive understands the specialist, what "makes him tick," what motivates him. Such an executive can harness unlike specialists into a smoothly working team.

The third phase of the organizing problem is setting up the authority and responsibility relationships. We work better when we know from whom we must take orders and to whom we are responsible. The ideal "one man-one boss" relationship is no longer adequate for today's complex operations, and it is commonly found that more than one executive shares work authority — for example, a line executive, a cost accountant, an inspector, and a personnel manager. Each of these exercises a different kind of authority over the work force. This complicates the organizing function and necessitates the clear delineation of authority and responsibility mentioned. It is a price paid for the benefits of specialization.

The fourth problem of organizing is that of staffing. We work better when we know exactly what our job demands of us. What we do here is to write a job description to show what the job demands in terms of skill (mental and physical), effort, working conditions, and responsibility. Then we seek to hire people who can fulfill those job demands.

"Build around the work to be done, not around the people" is the principle involved. This benefits the employee, for he is doing the work he is best suited to do, and it benefits management, for it is getting the employees most suited to the work in hand. (The economic system also benefits, for minimal skill is being wasted.)

Executing. Executing is "getting the job done." In today's economy, it is largely a matter of motivating people to work at a pace or a tempo describable as "more than adequate." We all know what "adequate" means — just getting by, not being fired, "soldiering." *Our responsibility as managers is to motivate our employees to work at a pace clearly perceivable as more than adequate.* One measure of our success in discharging our managerial responsibilities is the size of the difference between an adequate pace and what we motivate our employees to achieve.

Thirty years and more ago it was different. Then, the foreman was the best fighter. And there is a cause-effect relationship in that sentence. He ruled with his fists; fear was his major weapon. The Immigration Act of 1923, reducing the numbers of persons immigrating into the U.S., changed this.

We are now dealing with a work force that is native born and that has an average of 12 years of education. A song popular in the Twenties, "If You Don't Like It Over Here, Why Don't You Go Back Over There?" addressed to such labor "agitators" as Lithuanian-born Samuel Gompers, has no meaning to a worker born in the U.S., educated through high school, and accustomed not only to living according to a set of rules but also to having a voice in making those rules.

It is well established among union organizers that "defense against injustice" is a more powerful appeal to join the union than "higher wages." Men join out of the bitter memory of foremen who abused their power, who made capricious, arbitrary decisions, who "played favorites," and so on.

Here is where skill in human relations comes into prominence. A good manager knows two propositions about human nature that on the surface contradict each other: (1) All men are alike. (2) No two men are alike.

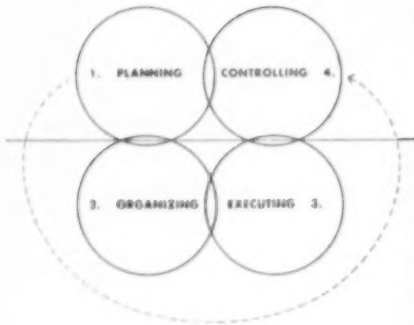
The first statement is true in that we all have the same needs, physiologic and psychologic. We all need food and rest, some degree of security, and recognition and status. But the second statement is also true, in that no two of us have these needs in exactly the same proportions.

Studies People As Individuals

Accordingly, the skillful manager studies his people as *individuals*, and as *individual members of his group*. He learns that Al has strong money drives, because owning the symbols of success means much to him. Bill has strong security needs; Joe responds to power; Bud exhibits strong needs for status and recognition. The skillful manager also knows that bonds of loyalty (team spirit) tie these men together in many subtle ways. From his study of his men he learns how to tailor-make a set of appeals or motivating forces to each of his men's needs. He knows that we all react in fairly predictable ways to positive and negative stimuli, and he learns from his daily experience with them how to motivate his men to "more than adequate" performance.

Since he is dealing with a native born, educated group, I will hazard

Management Functions, cont.



a guess that he relies on positive motivations more than on negative. I suppose I could sum up an enormously complex subject by saying that leadership of today's work force is largely by personal example and persuasion.

The second phase of executing is making modifications in the original plan as it unfolds, in order to adapt to changing circumstances.

Controlling. Controlling has a special sense in the management literature. Essentially it means following up to ensure that orders are being properly carried out. In the short run, every member of the management team from the foreman or supervisor up is doing this work all the time. In the long run, it is the board of directors that checks and evaluates the quality of the work of the executives.

Professor Copeland has defined this managerial art as "the talent for asking discerning questions." It is the ability of the board to ask such queries as: "Did the work proceed exactly according to plan?" Since it is impossible to plan with that degree of exactitude, the answer here will almost always be No.

The next question, then, is: "In what ways are we deviating from the plan?" This forces the executives to say precisely what they are doing, or, put differently, to discharge their responsibility through answering questions (responsibility means answerability).

Why Was Plan Changed?

The next query, of course, is: "Why did we change the plan?" Here the reasoning and persuasive powers of the responsible executives are put to the test. The executives defend their course of action, the directors evaluate it. Finally, the hardest questions of all are asked: "Are the modifications

good or bad; and, *just how* good or bad?"

In order to discharge its responsibility to the owners (or taxpayers) properly, the board must be made up of men who have practical wisdom derived from long experience and who are able to learn the lessons bought from experience. For it is self-evident that, while experience may be the best teacher, still she does not hand us her lessons on a silver platter. My experience has been that I have had to dig in to my experience to learn its lessons. Similarly a corporate director must look at his executives' record with a combination of wisdom derived from experience and what is called "Monday morning quarterbacking."

Avoid Unfairness

Anyone can win last Saturday's game on Monday. All one need do is read the Sunday papers and then avoid the reported mistakes of the quarterback — it's easy! The director can't help but know more than the executive did after the planning period is over. He must therefore exercise restraint and strive as hard as he can to avoid being unfair. His evaluation must be in terms of: "How well would I have done on this particular decision *last spring*?"

It is at this juncture that the interrelationships between the functions of management become clearest, and also that we see why the four circles overlap. The better we plan, the easier it is to control. If our plan was well laid out and tested in advance, it will require fewer modifications. Hence, the checking on it will require less time. We can therefore do a better job of controlling, for our attention is directed to fewer problem areas.

This means that we can probe more thoroughly into our past record and can derive the lessons therefrom more completely. And, since we are doing a better job of learning from experience, our planning will improve. We have here the opposite of a vicious circle; we have a beneficial circle — better planning yields better controlling, better controlling yields improved plan-

ning, and the spiral continues to carry us up to the topmost limit of our ability to learn, wherever that may be.

The publication, *Armed Forces Management*, recently concluded a long series of articles the theme of which was "Command and management are synonymous." Where our job is to "get work done through other people" we are performing these functions.

This also explains why management skills are transferable — why, for example, James Worthy of Sears, Roebuck & Co. can operate with equal skill in the public sector of the economy as well as in the private, as can Frank Pace of General Dynamics, or Gen. Douglas MacArthur of Sperry Rand, or Gen. Lucius Clay of Continental Can. Writers on business subjects call this "cross-pollination of ideas." What we learn in one management position is applicable in other management positions.

To illustrate, the United States traditionally has a small peacetime army. When an emergency arises, the army is filled out to wartime strength. Many business managers are commissioned. They bring to their military service not only their well known impatience for quick action but also their managerial skills and *expertise*. The army benefits from their contributions.

But these men also learn while performing military service. They bring good ideas back to their civilian posts. All benefit, therefore, from this exchange.

The practical lesson for us is to warn against "compartmentalizing" our minds, the besetting sin of the specialist. We ought to realize that whatever leadership responsibilities we carry are enriching our management jobs.

In brief, if a person is a boy scout leader, if he is a committee chairman in his club, if he is active in a voluntary association, if he bears any other leadership responsibility whatsoever, it enriches him as a manager. Conversely, he brings more to the task from his full-time management job.

(To Be Concluded in the Next Issue)

GOOD-BY, 3 by 5 CARDS

Gift Reporting Is a Primary Administrative Responsibility

EUGENE E. COHEN

Vice President and Treasurer, University of Miami, Coral Gables, Fla.

UNTIL last year we were not satisfied with our procedure for recording gifts and grants. The basic accounting for such transactions was in order but providing answers to the following recurring questions often meant time consuming digging in the files:

Who acknowledged receipt of Mr. Jones' gift to the university? Has Mr. Allen made other gifts? Was John Brown's gift received from him, his foundation or his business? What national corporations are currently making grants to the university? Professor Green has asked: "Did Mr. White send the \$100 he promised to support my research?" Can you prepare for the board a comparison of gifts received during December 1957 and December 1958? How many donors have contributed to the university regularly during the last three years?

New System Devised

To improve the background information on gifts and grants received, a new system of reporting was devised so that detailed information would be readily available.

A careful analysis of all sources of gift transactions within the University of Miami showed that four offices were key points in the eventual handling of all gifts and grants received: the scholarship administration office, the development office, the office of the grants and research auditor, and the treasurer's office.

(Continued on Next Page)

Submit 7 copies of this form to Treasurer for Coding & Distribution.

UNIVERSITY OF MIAMI
GIFT OR GRANT TRANSMISSAL

To: Chief Accountant Date: May 10, 1959

From: Development Office

DONOR: Name: Brown, John Rodger
Address: 213 Main Street
Miami, Florida

PURPOSE AND RESTRICTIONS OF GIFT/GRANT: Current Gift

NATURE OF GIFT/GRANT:
Cash or Money Orders
Checks: Payee Date Check No.

Securities:
Issuing Company Description Shares Cert. No. Amount or Value

Smith and Company Common 100 C1034 11,000

Other: (Equipment, land, library, etc. - DESCRIBE FULLY. USE ATTACHED LIST IF NECESSARY)

TOTAL AMOUNT OF GIFT/GRANT: (Present value securities, equipment) \$ 11,000

CREDIT TO ACCOUNT TITLED: CURRENT GIFTS ACCOUNT NO. 4310

EXPENDITURES AGAINST THIS GIFT/GRANT TO BE AUTHORIZED BY: President Pearson

ACKNOWLEDGMENT FOR THE UNIVERSITY WAS MADE BY: Yes No Unknown

THE DONOR IS AN ALUMNUS: Yes No Unknown

THIS IS A: New Gift ☒ Payment on Pledge ☐ Unknown ☐

ADDITIONAL INFORMATION: (In cases of grants give dates, terms, overhead, etc.)

Further support of University by Mr. Brown - see Brown Family Foundation (0996) and Brown Steamship Lines (0998)

No Publicity

5/10 - Open 110, HI 111, Low 109, Close 110 - NYSE

Enclosure(s) —

DISTRIBUTION:
President
Treasurer
Development Office
Dean
Transmitter
Property Control (when equipment)

Signature: J. M. Brown (Transmitter)

Signature: Eugene E. Cohen (Treasurer)

SAMPLE

Fig. 1 — Gift or Grant Transmissal Form

Gift Reporting, cont.

These offices were given the prime responsibility of filling in the Gift or Grant Transmittal form (Fig. 1) and forwarding with it the check, stocks, and so forth, and any other accounting information, directly to the treasurer's office.

The treasurer's office checks the completeness of the form and fills in code information as to donor number, nature of gift or grant, and purpose and restrictions of gift or grant. The original copy is then forwarded to the chief accountant, together with the check, stock certificate, or other documents supporting the gift or grant, and copies of the form are sent to departments concerned.

The treasurer's coded copy goes to the machine accounting department, where basic information coded on the Gift and Grant Transmittal form is punched on one of the cards used in preparing the Gift and Grant Report (Fig. 2). This is done on a batch basis weekly. In addition to date, donor's name and number, the purpose, nature and dollar amount of the gift are recorded. The account number is punched and alumni and new gift or pledge payment information is included, all identifiable through the use of the code details section of the Gift and Grant Report form.

All who are acquainted with the flexibility of punched card machines can easily see the types of information and reports readily available on a month, year or comparative year basis.

On its return from the machine accounting department, the treasurer's office files the Gift and Grant Transmittal by donor number so that detailed information not punched in the card is immediately available to supplement the information on the Gift and Grant Report.

Let us trace through the gift of John Rodger Brown, whose personal gift was received on May 10, 1959: The office transmitting the gift records all available information on the transmittal form and forwards it, with enclosures, to the treasurer's office, which codes the basic information for the Gift and Grant Report. This coded

Date _____

DATE			DONOR NAME
MO.	DAY	YR.	
5	06	59	ADAMS JAMES N
5	03	59	ARNOLD JOSEPH C
5	31	59	ARNOLD JOSEPH C
5	11	59	BROWN FAMILY FOUNDATION THE
5	10	59	BROWN JOHN RODGER
5	19	59	BROWN STEAMSHIP LINES
5	17	59	MORGAN JAMES L
5	23	59	NATIONAL INSTITUTE OF HEALTH
5	08	59	NATIONAL INSTITUTE OF HEALTH
5	01	59	NATIONAL INSTITUTE OF HEALTH
5	31	59	PAN AMERICAN MOTORS
5	16	59	SHELL BROWN AND CO

Fig. 2 — Gift and Grant Report, as

copy then goes to the machine accounting department, where the basic information is punched on a card to be used in preparing the Gift and Grants Report.

By means of the code, the following essential information appearing on the transmittal form can be read from the Gift and Grant Report: (1) Mr.

Brown's \$11,000 gift was in the form of stock. (2) Because there were no restrictions on it, it is treated as a current gift. (3) Mr. Brown is not an alumnus. (4) The gift is not part of any pledge.

Information not shown by code or otherwise on the Gift and Grant Report but available on the transmittal

Gift and Grant Report

OFFICE OF THE TREASURER

[illegible]

Developed by the University of Miami

Particularly for the private institution, the careful administration of gift

As we grow in size and number of transactions, the use of machine accounting in all phases of our gift recording program is imperative since it is at the same time more productive and less expensive to produce. My personal feeling concerning this new system might well be summarized: "Good-bv, 3 by 5 cards!" ■

Gifts From Public Utilities

T. E. BLACKWELL

Educational Management Consultant, Washington University, St. Louis

FOR many years, it was a well supported rule of law that the directors of commercial corporations had no right to "give away" their stockholders' money.¹ In 1883, an English judge ruled² that "charity has no business to sit at boards of directors."

Gradually, as a larger proportion of the productive wealth of the world became the assets of corporations, public opinion began to insist that such organizations must assume a fair share of the burden of supporting educational and other charitable institutions. In response to this change of public opinion, courts and legislatures re-wrote the common and statutory law to conform.

In 1950, the New Jersey legislature³ declared that "it shall be the public policy of this state that encouragement shall be given to the creation and maintenance of institutions . . . engaged in . . . charitable, . . . educational, scientific or benevolent activities . . . and to the end that such public policy may be supported and furthered . . . corporations organized under the laws of this state shall be specifically empowered to . . . contribute such sum or sums as, in the judgment of their respective governing

boards, will conduce to the betterment of social and economic conditions. . . ."

The following year, the directors of the A. P. Smith Manufacturing Company authorized a contribution of \$1500 to Princeton University. A small stockholder charged that the gift was a misappropriation of corporate funds.

In view of this stockholder's protest, the corporate directors filed a petition for a declaratory judgment as to their power to make such gifts without the specific approval of stockholders. The supreme court of New Jersey not only upheld the constitutionality of the New Jersey statute authorizing such gifts but it also declared that the common law, under modern conditions, would sustain such actions as an implied power, even in the absence of statutory authorization.⁴ The Supreme Court of the United States declined to review the decision of the state court.⁵

Since this famous case was decided in 1953, corporate directors of commercial and manufacturing organizations have not hesitated to make reasonable contributions for the support of educational and other charitable institutions without obtaining prior approval from their stockholders. However, in the case of public utilities, a somewhat different question of public policy is presented.

Utilities, because of their quasi-monopolistic status, are regulated by public commissions. In return for this regulation, they have been held to be entitled to a reasonable return on their capital assets. If the rates charged the public are not sufficient to provide a reasonable return, the commission

must permit them to increase their charges. Consequently, if a public utility is permitted to charge its contributions to one of its operating expense accounts, the public will, in the long run, carry the burden of such contributions in the form of higher rates.

This issue was presented in a case decided by the supreme court of Utah in 1958.⁶ The majority of the court ruled that the Union Pacific Railroad, as a public utility, had implied authority to make such contributions and to charge them as an operating expense. However, one judge dissented, saying:

"I am not yet ready to acknowledge that it is good public policy to permit exploitation by such monolithic corporations, in permitting them to put their corporate hands into the pockets of their patrons, in order to take more than they need for a reasonable return on their investment by a rate schedule established and permitted by a public agency. Such practices are dangerous, against public policy, and constitute a method of indirect taxation for such private charitable institutions."

The state utility commissions have, with very few exceptions, disallowed such items as operating expenses of a public utility.⁷ The reasons given by the members of the commissions for this disallowance may be summarized:

1. The patrons of public utilities should not be forced to become involuntary contributors to charities selected by the governing boards of the utilities as agent of the rate paying public for the purpose of making such contributions. If their customers wish to donate to such organizations, the gift should be a voluntary act.

2. Such contributions by utilities have no direct relation to the development or improvement of service rendered. Whatever benefit may accrue to the utility is primarily in the interest of the stockholders and they should bear the burden rather than those who make use of the services of the utility.

¹Dodge v. Ford Motor Co., 204 Mich. 459, 170 N.W. 668 (1919).

²Hutton v. West Cork Ry., 23 Ch. D. 654 (1883).

³The following jurisdictions have enacted similar legislation: Ark. (1951); Calif. (1949); Colo. (1947); Conn. (1953); Del. (1941); D.C. (1951); Fla. (1955); Ga. (1953); Hawaii (1947); Ill. (1919); Ind. (1949); Kans. (1951); Ky. (1952); La. (1959); Me. (1951); Md. (1945); Mass. (1953); Mich. (1953); Minn. (1949); Miss. (1952); Mo. (1957); Neb. (1953); Nev. (1953); N.H. (1953); N.J. (1950); N.M. (1951); N.Y. (1941); N.C. (1945); Ohio (1953); Okla. (1949); Ore. (1953); Pa. (1945); R.I. (1952); Tenn. (1925); Tex. (1955); Utah (1953); Vt. (1953); Va. (1954); Wash. (1953); W. Va. (1949); Wis. (1951).

⁴A. P. Smith Manufacturing Co. v. Barlow, 13 N.J. 145, 98 A. 2d 581 (1953).

⁵346 U.S. 861 (1953).

⁶Union Pacific Co. v. Trustee, Inc., 8 Utah 2d 101, 329 P. 2d 398 (1958).

⁷See Public Utilities Reports Digest, under the heading "Expenses \$46, Donations." The following are a few recent decisions permitting utilities to charge charitable contributions as an operating expense: *In re Southern Bell Tele. Co.*, 2 P.U.R. 3d 1 Ark. (1953) N.J. Bell Tele. Co. v. Board of Pub. Util. Commissioners, 12 N.J. 568, 97 A. 2d 602, 100 P.U.R. (ns) 379 (1953). *In re N.J. Bell Tele. Co.*, 24 P.U.R. 3d 18 (1958). *Re Diamond State Tele. Co.*, 48 Del. 497, 107 A. 2d 786, 5 P.U.R. 3d 493 (1954). *Board of Supervisors of Arlington County v. Va. Electric and Power Co.*, 196 Va. 1102, 87 S.E. 2d 139, 8 P.U.R. 3d 120 (1955).

Your Purchasing Procedure

Is it sound, simple and flexible? To be effective it should be all of these. And no time wasted on the routine tasks of processing the inevitable paper work!

A. P. NESTOR

Purchasing Supervisor
University of Kentucky, Lexington

EDUCATIONAL purchasing, like industrial purchasing, must be based upon a solid foundation of professional experience, adequate training, and skilled use of all the available "tools" of the profession. Not the least of these tools is a sound procedure that reduces to a minimum the routine tasks of processing the inevitable paper work.

An adequate purchasing procedure for an educational institution requires at least the following:

1. The full support of the college administration. This involves an understanding of the general procedures used by the purchasing office, confidence in the moral, ethical and professional standards of the purchasing personnel, and complete support of the decisions made by the purchasing officer.

2. A sound approach to organization. The organization of the available personnel, utilizing the individual's strengths and minimizing his weaknesses, together with the organization of the work load and work flow, is essential to the development of a sound purchasing organization.

3. The accomplishment of the desired results. Unless the procedure being used produces the desired results through adequate purchasing control

and efficient, timely handling of the requisitions, quotations, purchase orders, and invoices, it is inadequate and unsound in one or more respects.

4. Simplicity. As in any activity, simplicity aids understanding, gets co-operation, and assists materially in administrative control.

5. The maintenance of adequate records. Records are a necessary nuisance in the development and operation of a sound purchasing procedure. The proper records simply maintained, easily accessible, and producing the necessary information when required are essential to the efficient operation of the purchasing office.

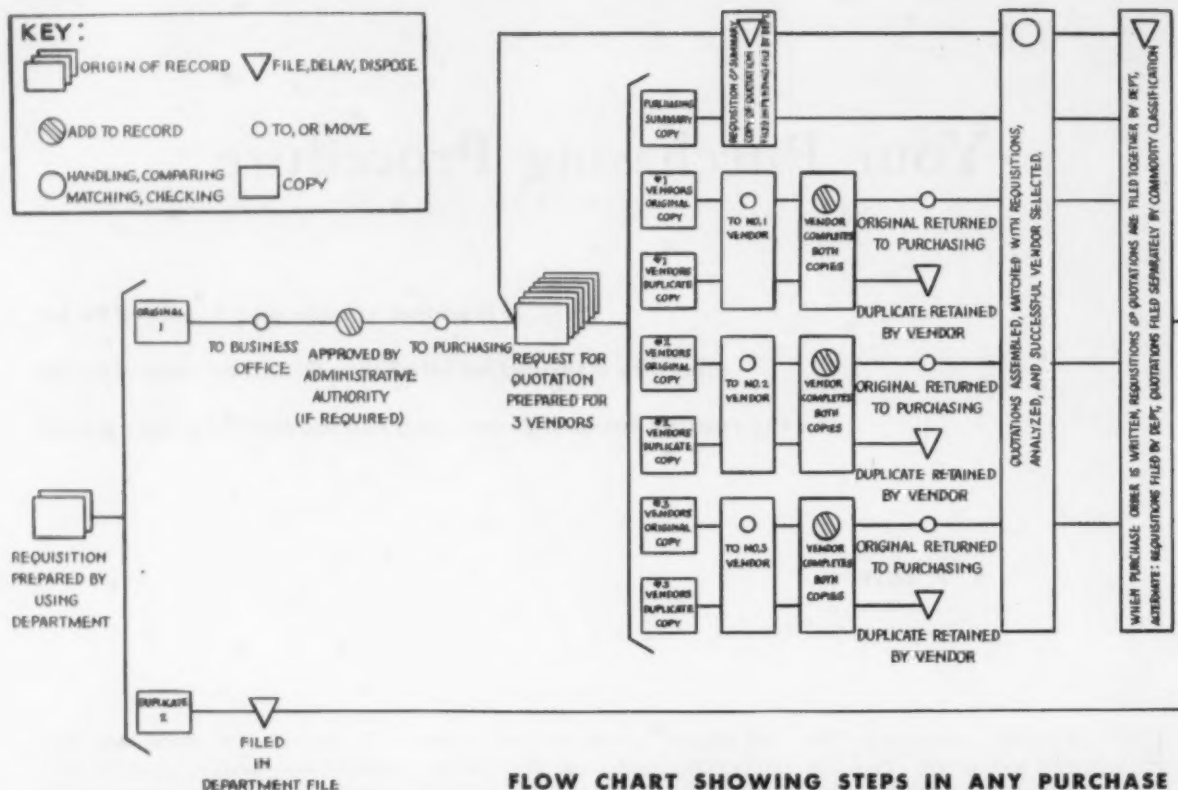
6. Flexibility for unusual situations and growth. The best planning by professors, research personnel, department heads, administrative personnel, and the purchasing officer will still fail to eliminate emergency purchases. These result from breakdown of equipment, necessary changes in plans, and even oversight by the planners. Flexibility for such unusual purchases is essential. The normal growth of the educational institution will also require a flexible procedure that can absorb the increased work load with a maximum of efficiency through the ready absorption of additional personnel into the office organization.

7. Provision for checks and balances. A well organized procedure will provide the necessary separation of responsibility for requisitioning, ordering, approving and paying for commodities or services. It is desirable that the responsibility for writing the purchase order, the responsibility for receiving the materials, and the responsibility for writing the check be given to different individuals and not placed in the hands of one individual or his immediate subordinates.

The organization of a purchasing office concerns both personnel and the flow of paper or forms required in the orderly processing of college or university requirements. However, this discussion will deal primarily with the organization of the purchasing procedure as it relates to the actual flow of paper into, within and out of the purchasing office. The ideal procedure naturally will be designed to accomplish the goal of the professional purchasing agent, that of "buying materials of the right quality, in the right quantity, at the right time, at the right price, from the right source."^{*}

The college business manager is concerned with all the varied operations of an educational institution. He is charged with the responsibility of

^{*}Heinritz, Stuart F.: Purchasing. New York: Prentice-Hall, 1947, p. 11.



implementing the educational policy and program through the financial and business activities within his view. In the broad field of business management, with the exception of the payroll function, scarcely any activity occurring within the entire college fails to come within the scope of the purchasing function.

It is important, therefore, that the purchasing function be as soundly organized in the smaller colleges as it is in the larger universities. The larger the school, the more specialized will be the work of each individual within the business office. There will be a specialist in accounting, a specialist in food service, a specialist in maintenance, and, of course, a specialist in purchasing. Within the business office of a smaller school, however, it is normal to find all or most of these functions performed by the business manager. The multiplicity of his duties, the lack of adequately trained assistants, the heavy pressure of time, and the complexity of the many institutional requirements indicate clearly the need for a sound, simple, flexible and effective purchasing procedure. A sound purchasing procedure will

contain certain elements that are present, to a greater or lesser degree, in every purchase from the buying of a loaf of bread on the way home to lunch, to the most painstaking decision in buying an automobile. These essential elements are: (1) need, (2) request, (3) price, (4) order, (5) receipt and approval, and (6) payment (see Flow Chart).

Each of these basic elements will be discussed with the purpose of indicating the minimum steps necessary for a good purchasing procedure applicable for any college or university, regardless of enrollment and whether one business officer or many specialists are available.

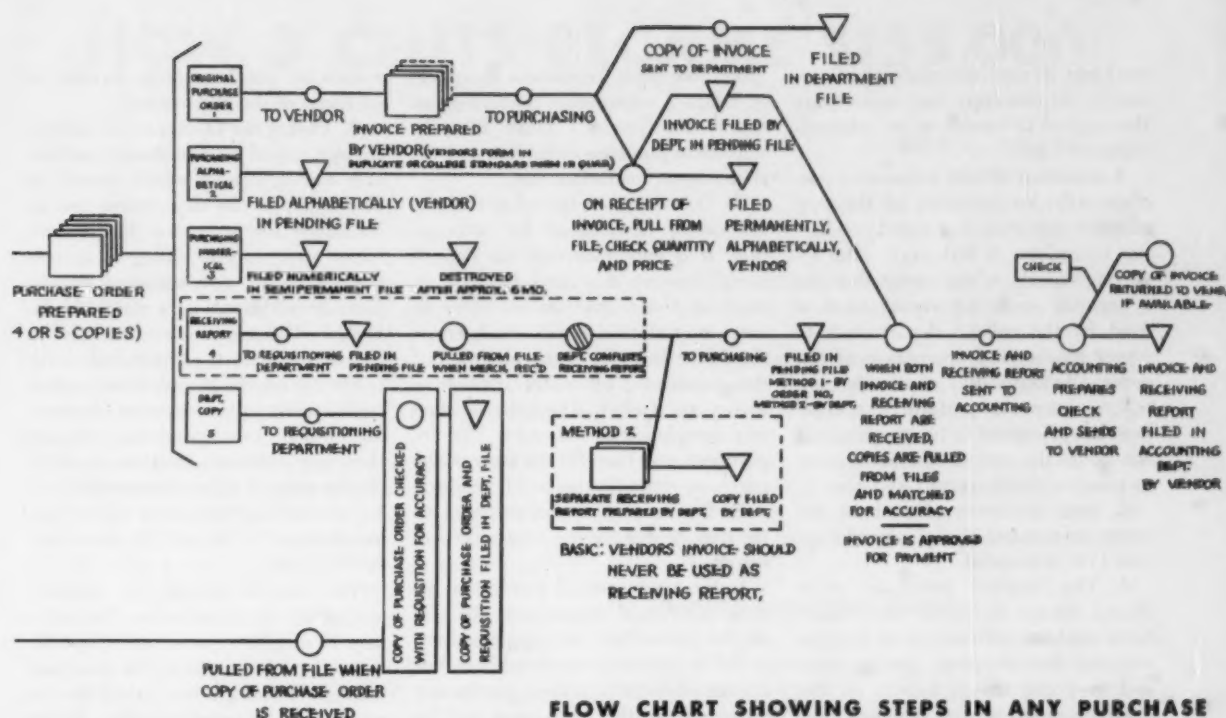
1. Determination of Need. Quite properly, the department head or professor engaged in a particular activity must have the fundamental right to specify the quantity, quality and type of items necessary for him to accomplish this activity. His determination of need is often made in cooperation with the purchasing agent, who offers guidance based upon his experience and wide general knowledge.

Normally, departmental needs will arise as a result of the day-to-day ac-

tivity of the department, or from certain emergencies resulting either from lack of planning, the breakdown of equipment, or other unforeseen events. Additional needs may arise from budget planning and the normal growth of the department.

2. Request To Purchase. Regardless of how the need arose, there must be a means of satisfying the need. As a matter of routine, such needs are met by the preparation of a requisition to the purchasing department. The requisition authorizes the purchase to be made, indicates that funds are available, and where applicable, authorizes the encumbrance of the necessary funds to pay for it.

A requisition should be prepared by the requisitioning department at least in duplicate. One copy should be retained by the requisitioning department, the original being forwarded to the purchasing agent. The departmental copy may be filed in a pending file either by (1) requisition number, (2) the name of the suggested vendor, or (3) chronologically. This copy is valuable when checked against the purchase order for possible errors in the purchasing office.



The original requisition (and any necessary additional copies) is forwarded to the business office, being routed through other administrative offices as required. Naturally, any additional administrative approval will result in some delay and should be minimized. In many instances, a copy is required for the accounting office in order that funds may be set aside (encumbered) to cover the purchase.

3. Request for Price. When the requisition, properly approved, is received by the purchasing agent, it is edited and prepared for submission to vendors for quotation. A well designed Request for Quotation form will often allow for the preparation of multiple requests with one typing, thus reducing the clerical work involved. A summary sheet (first page of Request for Quotation) will assist materially in summarizing and analyzing most quotations received. Pending return by vendors of the original Request for Quotation form, the quotation summary sheet and the requisition may be filed *alphabetically* by name of the requisitioning department, or *numerically* by quotation number assigned by purchasing office.

When all quotations have been returned on a date specified in the Request for Quotation, the quotations are analyzed and the order is awarded to the "lowest and best."

When the purchase order has been written, the order number is noted on the requisition, which is then filed by name of the department. Permanent filing of quotations may be accomplished by attaching them to and filing them with the requisition, filing them by quotation number, or filing them by commodity classification.

Any of the three methods will usually require a commodity index of some type for ready reference. A quick reference to previous quotations will greatly reduce the amount of work involved in preparing specifications for similar purchases.

One of the fundamental responsibilities of the department preparing the requisition is that of determining the quantity, quality and type of item required to meet its particular need. This is a basic tenet of educational purchasing, which should be modified only and almost exclusively by a decision of higher administrative authority, and by certain college standards that

have been properly established. The purchasing agent should endeavor to recognize and encourage this responsibility through his cooperative efforts with the departments of the college.

Similarly, it is the responsibility of the purchasing agent to determine the source of the "lowest and best" price and to place the purchase order. Full cooperation and consultation, when necessary or desirable, with the requisitioning department will avoid any misunderstanding or embarrassment.

4. Placing the Order. When the quotations have been received, analyzed and the proper source selected, the purchase order is prepared with an adequate number of copies. A minimum distribution would be: (a) original purchase order to vendor; (b) one copy retained by the purchasing office to be filed alphabetically; (c) one copy retained by purchasing office to be filed numerically; (d) one copy returned to the department for permanent record. Additional copies may be supplied as desired: (e) one copy returned to the department to be submitted to the purchasing office as a receiving report; (f) one copy may be forwarded to central receiving; (g) one

Sound Purchasing Practices, cont.

copy may be sent to accounting, if necessary; (h) one copy may accompany the original to vendor as an acknowledgment copy.

A minimum of four copies of a purchase order are necessary for the most effective operation of a sound purchasing procedure. A fifth copy (the receiving report) is also essential *unless* a separate receiving report form is used by the college departments to report receipt and acceptance of the order. Obviously, any copies that are not necessary to perform a specific function of control or information will not justify the cost in time and money to process, check, record and file.

A brief discussion of each of the minimum number of copies would appear to be warranted.

A. The original purchase order should always be given the vendor. Such essential information as may be required for shipping, specifications and invoicing should appear on the purchase order. A well designed purchase order will be simple, uncluttered and complete.

B. One copy is retained by the purchasing office for control and recording of the order. This copy should be filed alphabetically by vendor's name. It is this copy of the purchase order that is the key to successful control of the purchase as it provides a record of receipts and payments applying against the order.

When the invoice is received in the purchasing office, it is checked against this copy of the purchase order for compliance with specifications, quantity, prices, terms and f.o.b. point. The date and amount of the invoice should be recorded on this copy, together with any transportation cost; thus a current picture of the status of the order is given.

C. One copy is retained by the purchasing office for information and occasional reference. This copy is filed numerically and may be destroyed after a period of time. It is chiefly useful in checking deliveries from a source other than the original vendor, in determining the department concerned when correspondence is received, and in answering departmental inquiries.

It should be noted here that the purchasing office has immediately avail-

able three ready references for quickly locating information concerning an order: the vendor's order file, the numerical purchase order file, and the department requisition file.

D. One copy is returned to the requisitioning department for information. It is important that the department compare this carefully with its copy of the requisition in order to catch any clerical errors. Such errors should be brought to the attention of the purchasing office for correction, if they are likely to affect the satisfactory completion of the order. The department may then file the copy of the purchase order by name of vendor.

E. One copy may be returned to the department for use as a receiving report.

In many educational purchasing offices, additional copies may be desirable. Since they are supplementary to the requirements outlined here but are not essential to a basic purchasing procedure, further discussion will be omitted.

5. Receiving and Approving the Order. Satisfactory delivery of the order may be reported to the purchasing office by a copy of the purchase order designated for this purpose. The department need indicate only the items received, the date of receipt, sign the order, and return it to the purchasing office.

Either Method Adequate

A second method of indicating departmental receipt and approval for payment is by submission by the department of a separate receiving report form. This requires more clerical work, the design and preparation of an additional form, and perhaps some delay in submitting the receiving report. Either of these methods will serve adequately to report delivery and receipt of the order and to authorize payment of the invoice. It is important, however, that the vendor's invoice should not be used as the receiving report. To do so may result in loss of the invoice, delay in processing, and loss of cash discount.

If the receiving report is returned to the purchasing office before the vendor's invoice is received, it may be placed in a pending file for ready ref-

erence by purchase order number or by name of the department.

6. Paying the Invoice. The vendor's invoice should be submitted in at least two copies, one of which should be forwarded to the department for information and reference. If the institution requires that billing be accomplished on its own standard invoice form, an additional copy should be included. This copy, when returned to the vendor with the check, will assist in identifying the payment and reduce bookkeeping errors, thereby eliminating much correspondence. Unless there are legal considerations involved (in the case of state or municipal colleges or universities), there is little real justification for the use of a standard invoice form.

The invoice should be checked against the purchase order for accuracy in quantity, price, terms, specifications and f.o.b. point. The date and amount of the invoice should be recorded on the purchase order. If the receiving report has not been received, the invoice may be placed in a pending file by name of the department. Care should be taken to avoid loss of cash discounts by use of a tickler file.

When the receiving report is received by the purchasing office, the invoice is removed from the pending file and checked against the receiving report. The invoice, with the receiving report attached, is then approved by the purchasing office and passed to the accounting office for payment.

The invoice may be filed numerically in the accounting office by voucher, check or serial number, or it may be filed alphabetically by name of the vendor. The latter method is preferable because of the increased information available for purchasing analysis.

The purchasing office of a college or university is vitally concerned in every purchase of supplies, equipment and services required by his institution from the moment the need arises until the final payment has been made. The effectiveness of the purchasing officer or business manager in carrying out this important function will be materially increased by the establishment of a sound, simple and flexible procedure. ■

HOW 3 CENTS BECAME \$155,000

ROBERT E. NELSON

Vice Chancellor, University of Kansas City, Kansas City, Mo.

THE new director of development and his wife were attending their first bridge party at a faculty member's home. The setting was a town of 6000 people, located in the farm belt. The 400 student college was coeducational, church related, and hardly affluent. One of its unusual claims to fame was its excellent intercollegiate girls' basketball program.

The wife of a professor, after quizzing the director of development about his high-flown title, suggested: "If you are supposed to raise money for this college, why don't you get the girls' basketball coach to tell you about his rich friend?" The friend turned out to be one of the aircraft industry's great pioneers, Glenn L. Martin.

For several years the basketball girls had done well in national competition, and Mr. Martin, an enthusiastic fan of the sport, had seen them at tournaments. Several times he called the coach to his box and complimented him on the team's ability and sportmanship. These brief contacts were but once a year.

Having heard this story, the director of development included Glenn L. Martin's name on the list to receive a printed invitation to commencement — not with any hope that it would be accepted but merely as a token acknowledgement of Mr. Martin's interest in the college.

Within 10 days Mr. Martin wrote the college president that he was grateful for the invitation, would be delighted to come, and asked help in getting accommodations for himself and his assistant.

No time remained to make elaborate preparations. Therefore, it was decided to invite him to all the week-end events and to treat him just like any other member of the college-community family. He arrived early and stayed three days.

Like many men in similar positions, Glenn L. Martin was a lonely person. The casual, warm-hearted and sincere gestures of friendship made by the community gave him a thoroughly enjoyable visit.

Mr. Martin Makes a Speech

The night before he left, the exhaustion that usually falls over a small college town at the end of a commencement week end had arrived. There were no more planned functions. The college was closed and the crowds had disappeared, but Mr. Martin could not be left sitting in a hotel room his last evening in town. Members of the board of trustees' executive committee that could be located were assembled, and a dinner was given for 12 persons.

The evening was memorable in the lives of those present. Mr. Martin talked informally for almost four hours. He sketched the development of aviation in America; he discussed the status of the aeronautical sciences and related

problems that continue to challenge man's ingenuity. It was a rare opportunity to listen to this man discuss the role of conquered space in world affairs.

Suddenly Mr. Martin switched to a discussion of liberal arts colleges and their relation to a world now geared to move faster than sound. He concluded that all the technological advances made in America could either usher in humanity's greatest era or could bring incomprehensible disaster to civilization itself. He concluded that a liberal arts education — the exploration of the basic intellectual disciplines — is basic preparation for sane and full living in the technological age.

He Wanted an Academic Blueprint

In summarizing his impressions, Mr. Martin stated that the college's obvious needs were many, including a new Hall of Science. He said he would help bring it into reality. Furthermore, he declared he did not wish to contribute to an unbalancing of the college's academic program in favor of the sciences. Therefore, he asked to see where the institution intended to "go" in the future. He wanted an academic blueprint. There was none.

Prior to dinner that evening, Mr. Martin and his assistant had been calculating how much he had uncommitted and available to give away in that tax year. It was \$55,000. At the close of his speech he announced this as a gift to the college.

It took five months of frenzied work on behalf of the faculty, the board, and the college administration to put its dreams on paper, including plans for a Hall of Science. On December 2, the president of the college placed a call to Mr. Martin at his Baltimore office to say that the blueprint he had requested was ready for presentation. Mr. Martin was at his farm resting. Forty-eight hours later, the radio broadcasts of the nation were interrupted by the announcement of his death.

In his will was \$100,000 for the college. At the time of his death he was working on a revision of his will to include more philanthropic bequests, which would save much of the estate tax.

The impact of Glenn L. Martin's visit, arranged by a 3¢ stamp, is still felt in that small college town. His big thinking inspired promotion of a 10 year development program, which brought to the college more gifts in the following 22 months than it had received in its previous century-long history.

There are lessons here for the other Glenn L. Martins in our nation — and also for many small liberal arts colleges. The question that still plagues everyone at X College is: "What would have been the result if the academic blueprint had been ready when Mr. Martin drove into town?" ■

Cost Accounting Can Play a Part

However, the problem is to keep it in proper perspective. For it is one, but only one, of the criteria that are necessary for informed decision making.

WILLIAM J. MURDOCK

Assistant Controller
University of Pennsylvania, Philadelphia

AT THE University of Pennsylvania we have made cost studies for more than 30 years. Some enthusiastic effort was made by the accountants to develop useful financial information, but this information did not fit the established pattern of financial management.

In industry, cost accounting is an important management technic for controlling costs and operating for a profit. In education, the control is largely through annual budgets. Until we can develop a technic that translates budget proposals into analytical cost data, I see little use for future studies of instructional costs.

However, the details of this work proved very helpful recently. We made a joint study of the costs of education and contributions to the public with Temple University and the University of Pittsburgh. This was used in connection with the presentation of the needs of these state-aided institutions to the legislature. No attempt was made to compare costs or operation of one institution with another, but rather to determine an estimate of the value of benefits to the community of university programs.

From a paper presented at the Eastern Association of College and University Business Officers, 1959.

There are other areas in which we feel that the distribution of indirect costs is useful. We use a job order cost system to distribute the maintenance and operations of plant to the buildings served. This is also used to charge costs not on the maintenance budget to other accounts. For example, the services of buildings and grounds office in moving a department would be collected on a job order and charged to the department served. The charges for repairing damages to a dormitory would be accumulated and charged to the students responsible for the damage.

Since some of our buildings are separately endowed, it is also a way of segregating these costs.

The buildings and grounds department cost system provides the directors of buildings and grounds with detailed information on the maintenance cost of each building. Thus, it is possible to compare the cost of each item, such as cleaning supplies, janitor service, heat, electricity and repairs, on a particular building with that of previous months or years. Our maintenance expense is about \$2 million (and with our new building program may go to \$3 million) and we feel that this large expenditure is worth considerable analysis.

We also use a job cost system in the printing department. Printing, while only a minor part of our total operation, is of a size that would be attractive as a business. The department employs 40 persons and has an annual budget of \$400,000. We installed a modern job cost accounting system in this plant. The cost of a job is collected and charged to the department, fund or contract which requisitions the service. In addition, the output of each cost center is determined and analyzed to point out inefficiencies that need correcting. The system conforms to the recommendations of Printing Industries of America, the trade association. The manager is able to compare his rates for each type of printing with the published average rates for the industry. He also has available data on under and over absorbed burden in order to check administrative expenses of the department.

An example of one of the smaller distributions of service department expenses is that of our medical school's animal house. This department buys and boards small animals for experiments. The department requesting the animal is charged for its cost plus a daily board charge. The flat per diem charge for board must approximate the total cost. No formal cost account-



The daily board bill of laboratory animals can be a direct charge on government contracts.

ing is done here. On this small operation, a periodic review and revision of the board rate suffices.

We have had no difficulty in having these distributions accepted as direct charges on government contracts.

An area that we are now considering for distribution of indirect expenses is restricted funds. We have for some years charged endowed professorships and departments whose income is restricted with social security tax and T.I.A.A. expense. These departments and funds in total have an income of nearly \$8 million annually, which they are free to spend almost without any indirect expenses. This is not an equitable arrangement. For example, it seems obvious to me that a fund to buy books for the library incurs some expense other than the direct cost of the books purchased. This includes the cost of selecting the books, of ordering, of processing the invoice for payment, and of issuing the checks. Records of the fund must also be maintained and reports of income and expenditures prepared and sent to the administrators. Of course, to have such a fund there must be a library,

and as the library exists only as part of the university, some of the general overhead must apply to the fund.

Another illustration is the cost of administering scholarship and loan funds. This is clearly a cost to these funds.

However, it is completely impractical to compute the indirect costs that apply to each fund or grant. It is impossible to say which loan fund was the one that required the scholarship office to supply another check, or which library fund was the one that added enough volume to the accounts payable section to require an additional office machine. The costs must be spread over all of those funds using the facilities. To allow restricted funds to be used solely for direct expense of a restricted nature while general funds are used for all the indirect expenses can ultimately lead to financial difficulties. The only way to recover these increased indirect costs is to charge a share of them to each of the activities of the university, including those supported by restricted income, either gift or endowment. Since we are computing overhead rates for government

contracts, the raw material for computing such a rate is available, even though we do not completely agree with Bulletin A 21 as a formula for distributing overhead.

While the acceptance of general cost studies has not always been enthusiastic in the past, new requests for studies are still being made, and we hope to find a place for cost accounting in our university. Unfortunately, interest in and uses for cost data seem to vary inversely with the financial condition of an institution. I believe it is the duty of the financial officers of colleges and universities to make available to the chief administrative officers enough information on costs and related data to ensure that educational decisions will not be made without regard to the financial implications and, on the other hand, to be just as certain that financial decisions are not made without regard to educational implications.

Cost accounting has a place in universities; the problem is to keep it in its proper perspective as one, and only one, of the various criteria necessary for informed decision making. ■

In Planning the College Union,

PLANNING a union might be defined as the science, and art, of coordinating the many, many details that make up both a structure and a program, the objective of which is the personal, social and cultural development of the college student of today for his career and citizenship of tomorrow.

Each detail can be likened to each stroke of a painter's brush. When the painting is finished, it is beautiful in proportion to the skill of the artist. Whether a union is beautiful depends upon the skill and experience of the planners, for in planning a union the artist's talent is replaced by thoroughness and method and the professional and technical training, knowledge, skill and experience of the planners.

How many strokes of the artist's brush go into making a complete portrait? Certainly the number would defy tabulation. Just so would the number of details that go into planning a union.

The oneness of structure and program that are the final result must be as completely coordinated and integrated as in a beautiful painting.

Basic Planning Principles

Some basic principles of planning are:

1. Since the only certainty in planning for the future is "change," the only recourse is to plan in terms of flexibility to meet that change, rather than to attempt to predict exact needs years into the future.

2. Planning must come initially from the functional and operational point of view.

3. Functionality and beauty of design are neither inconsistent nor incompatible. It is the operator's job to see that the building is functional. It is the architect's job to see that the functional is made beautiful.

4. Planning a union must be for the particular institution; not for an individual, not for a committee, not for a

director, not for a group, but for the university.

5. Carefulness, thoroughness and a reasonable amount of time are prerequisites to accomplishing the goal.

6. Sound relationships and excellent understanding must exist between and among the architect, the consultant, the director (if he's already on the job), and the committee. Each must understand and accept the other's role and contribution before the work begins.

7. Planning must include definite provision for expansion. No matter how large the building is, no matter how completely planned, there must be definite provision for additional space for a period of from 10 to 20 years ahead.

Three Greatest Problems

The three greatest problems involved in planning a union, I believe, are:

1. The tendency to copy precisely what someone else has done. No two college campuses, however alike they may be in physical size, enrollment and type of location, are ever truly alike.

2. The second greatest problem is to obtain full realization that the union, in most cases, is operating three shifts a week and that its responsible officers must keep it going six or seven days a week and can never completely turn their backs on its operation. The costs involved and the assurance of smooth, durable operations necessitate meticulous planning.

3. The third big problem is obtaining a sufficient staff, sufficiently trained. Therefore structure must be as efficiently laid out and as operationally foolproof as possible.

The case for careful planning, and the coordination of the many details, might start out with a campus survey. This is the effort by statistical method (questionnaire, opinionnaire) and by subjective analysis and assessment of

the particular campus situation, actually to find out, without guesswork, what the campus *wants* (in popular opinion), what it *really needs* (in fact), and what facilities, tailor-made for this particular situation, will meet the needs. The case for thoroughness in method is also the case for engaging a consultant — not an "expert," for there is no such thing — but a person who has been through the mill in union planning and operation.

A consultant can influence economy, efficiency, philosophy and arbitration, as follows:

Economy. Helping to steer planning in the right direction. Through assessing needs it may be possible to save a quarter of a million dollars or, perhaps, even half a million dollars on campuses where the attempt is being made on a relatively uninformed basis.

Efficiency. Saving time for both college and architect. Through developing plans based upon definite conclusions rather than upon whim, fancy and changing conclusions as new evidence comes into the picture. It has not been uncommon for a college or university to have to scrap one or two sets of plans before informed help brings the group to a solid conclusion. Efficiency in plan relationships is efficiency in operational dollars.

Philosophy. Developing a sound philosophy pointed toward the goals of the educational program.

Arbitration. Smoothing out the conflicts in points of view. No college campus is without conflicts. Perspective also is involved in the sense that an overview, free of bias, is likely to solve problems even though a committee has been working for a time. The consultant is one who is supposed to be able to see the forest *and* the trees at the same time.

Written Program

The result of the survey and of the consultant's efforts is the written program. This includes a statement of

the Consultant Has a Place

FRANK NOFFKE

Formerly Director of ASSCW Activities and Wilson Compton Union
Washington State University, Pullman

campus needs, a list of the facilities, recommended square footages, a description of each facility and how it should fit into the structure and the campus, space relationship charts, organization charts, a preliminary construction budget, and a preliminary operating budget.

Hiring Professional Help

When should a consultant be hired? When should a director be hired? Ideally, perhaps the director and the consultant might be one and the same person; the consultant would then become the director after the planning is done. This would be fine except that the element of perspective is not provided for; nor is there enough trained talent to provide for this happy arrangement. The consultant should be hired at the moment a twinkle lights up the eyes of those who want to get the union ball rolling. The same is true in developing additions or doing a major remodeling job.

The architect should be selected either by holding a competition or by means of a rating scale.

What can be expected during the development of the plan? First, there should be a *space relationships* chart as a part of the written program. Laymen cannot be expected to read blueprints and from them draw out the exact relationships that are necessary. A simplified relationship chart is a good starter. It shows in elementary form what facilities should be related and what should be the relationship among all facilities. There should also be a diagrammatic perspective to show the distribution of facilities according to floors. It is an often overlooked principle of planning that great headway is gained when the architect can see the problem or project as a whole at the same time that he is working on individual units and segments.

From this point on, actual *architect's preliminary plans* are developed,

usually first at 1/16 inch scale, and then at 1/8 inch scale. Preliminary plans at 1/16 inch usually transform diagrammatic perspectives into feasible locations, with these locations being worked around architectural and engineering technical and structural problems. After months and months of careful work and a lot of head-knocking, finally working drawings may be expected. In the process, however, the single most important relationship is the full and complete understanding that the building must be functional first and beautiful second.

The point of view of the director and the consultant (the operator) must be incorporated in order to make the building functional. It is the architect's job, while keeping it functional, to make it beautiful. Time and again, buildings are built with the committee approving plans of an architect while still another party, the director-to-be, must take over something with which he had nothing to do and, worse than this, a plan that has not had in it the blood, sweat and tears of an experienced union operator.

Problem Examples

Let us match the principles given with the following problems:

1. A union was designed to be almost exactly like a downtown club for the patriarchs of a city. There wasn't even a committee. Finally, the college managed to include in the structure a central information desk and sound system with exposed speakers. The snack bar was 30 yards away from the kitchen, and had to be supplied across customer areas.

2. One university had gone through two sets of plans before developing its third and final set with informed, experienced help. Set 2 had half the square footage in nonunion facilities.

3. Another college developed one set of plans and then not only the structure was changed, but the site also was changed.

4. Another called for a review of plans prepared without experienced help only a few weeks before the deadline on final plans.

5. Another university had to revise its entire kitchen layout after the building was half completed in order to save operating costs.

Costs of Inadequate Planning

Why do these things happen under the nose of thinking people at "institutions of higher learning"? The answer is simple but tragic. The true nature of the union and its complexity have not been realized. Even more important, the slighting of thorough planning can only result in continuing, inescapable high operating costs year after year after year.

Consider a \$50 a month mistake. Fifty dollars a month times 12 months times 20 years equals \$12,000. Would there be any fewer than two or three of those mistakes in planning? Suppose two are allowed. Then an extra expense of \$24,000 accrues over the period of 20 years. This may be a conservative statement of some of the mistakes made in the past. If a very large mistake were made also, it wouldn't take long to reach half a million dollars.

A perfect plan does not exist. However, there is plenty of room for improvement over mistakes, particularly those mistakes made because the operator's needs were not taken into sufficient consideration. There will always be need for the absolute maximum of operating efficiency, in order that maximum service can be given for the price available out of the campus pocketbook what with the press for educational funds today.

It is unfortunate if we revel in our bigger buildings, plushier lounges, shiny stainless steel equipment, and not have as our prime thought the development of the structure for the *program*, which is to develop young leaders to further our free society. ■

Library at Wyoming

proves to be a pleasant and comfortable place for study

KATHRYN L. SMITH

News Editor, University of Wyoming, Laramie

A LIBRARY and classroom building with superb facilities was completed in 1958 at the University of Wyoming, the state's only four-year institution of higher education.

Constructed of steel and with a 210 foot frontage, the \$2 million William Robertson Coe Library and School of American Studies Building contains a basement and three floors. This 118,000 square foot enclosure provides space for approximately a million volumes and documents, and for classrooms, offices, seminars, conference rooms, and special facilities. Exterior walls of native sandstone blend in with other campus buildings and with the Wyoming Rockies, which flank the town.

Building Philosophy

The philosophy behind the design was simply to provide a pleasant, comfortable place for students to study. Every aspect of design and furnishing was selected with this primary purpose in mind. All colors in stone, marble and terra cotta, on the walls, and in the rubber tile floors are interrelated.

Emphasis also was placed on flexibility and economy. Most interior walls are temporary and were installed following the completion of floors and ceilings. An irregular floor pattern, obtained by intermingling 9 inch squares of one full color with two accent colors, means that walls can be moved without achieving an awkward floor arrangement.

Modular Design

The new building was designed in a modular arrangement whereby four columns form a square, which can be

divided into smaller areas or enlarged. Each quarter within the four-square columns is equipped with its own ventilating and lighting units. Columns are centered so that book-stacks can be spaced in any desired pattern.

Glass display areas that flank the entrance of the building are used chiefly by the art, home economics, and geology departments so that all students can see departmental accomplishments. Each display window is lighted and measures 22 by 11 feet. The floors of the lobby and main stairway are of greenstone.

Library Proper

The library area, 104,000 square feet, seats 1100 at chair and table or occasional seating arrangements.

Library ceilings of past eras were high, a factor that made lighting and heating difficult. In this building, ceilings are relatively low. The book-stacks, 7½ feet high, determined the height. These low ceilings make for better lighting since proper intensity of light is an important factor in ease of reading. The stacks are easily accessible, and thus encourage investigation and learning.

Floors anywhere in the building are designed structurally to hold stacks. This called for a live load design of 125 pounds per square foot compared with 100 pounds for the average office building.

Jim Ranz, the library director, says that students "like to study tucked away in corners and will shun, if possible, large reading rooms." In this new library a group of tables and comfortable occasional seating for 100 is interspersed among the bookstacks.

A reference librarian in a glassed-in office is on duty on each of the three floors of the library or for each category of reading material. For students to be able to spot and reach the reference librarian encourages them to seek help in locating materials.

Each of the library's three basic subject-matter areas — the humanities, the social sciences and education, and the sciences and technology — contain periodical indexes, a small reference collection, and a basic collection of books.

Other features include 100 carrels — small individual tables with locked compartments and bookshelves — for the use of graduate students, also student typing rooms, a faculty and staff lounge, facilities for microfilming, and faculty study rooms.

American Studies Wing

Construction of the building was made possible through gifts from the late William Robertson Coe of Cody, Wyo., a New York City industrialist and philanthropist, whose donation of \$750,000 in 1952 initiated the American Studies program at the university. Devoted to the study of our American heritage and ideals, this program provides liberal scholarships at both the undergraduate and graduate levels in summer and winter study curriculums.

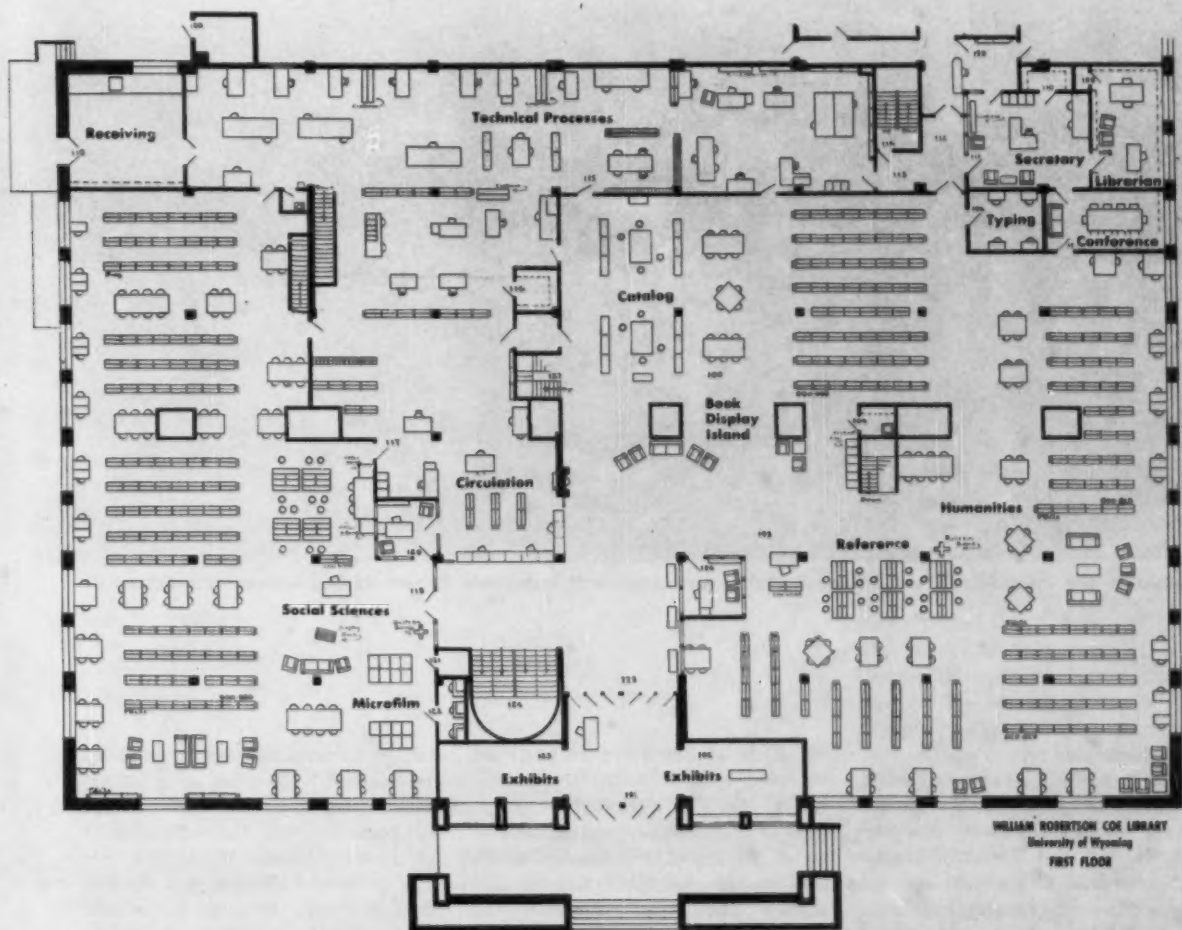
The American Studies wing, approximately 14,000 square feet in area, extends over a basement and three floors. The basement contains three classrooms, with a total potential seating capacity of 200. All classrooms are fully equipped for audio-visual study.

(Text Continued on Page 40)



Above: University of Wyoming's \$2 million William Robertson Coe Library and School of American Studies Building is impressive addition to Wyoming's only four-year

institution of higher learning. Below: First floor plan. There is a modular arrangement whereby four columns form a square that can be divided or enlarged.





Bookstacks are interspersed with informal seating arrangements in William Robertson Coe Library and School of

(Continued From Page 38)

A large meeting and reading room, which can be divided into a seminar and reading room by means of a folding door, is a focal point of interest on the first floor. Other features of the wing are two study rooms, containing 32 carrels for the use of graduate and upperclass American Studies majors;

12 offices, of which five presently are occupied by the history department, two by Dr. G. D. Humphrey, president of the university and administrator of the school, and five by American Studies personnel; a work and storage room, and microfilm and microfilm rooms. Scandinavian modern furniture and warm and richly

colored fabrics in upholstery, draperies and carpeting give this wing an attractive over-all effect. A print collection portraying the American scene is the decorating theme throughout.

In terms of traffic patterns, the upper floors were set aside for offices, seminars and study rooms, while classrooms, which receive the largest



American Studies Building at the University of Wyoming.

volume of student use, are in the basement.

One eye arresting feature of the building is a 600 pound wrought iron door leading to the Western history section. Designed by Frederick Porter of Porter and Porter, Cheyenne, who, along with Hitchcock and Hitchcock of Laramie, Wyo., were the building's

architects, it has been painted bronze. Fast becoming the focal point of Western history and reference for the Rocky Mountain region, this section of the library is appropriately decorated in a Western style. It contains a Wyoming stockgrowers room and a room featuring the effects of Owen Wister, Western novelist. A 30 foot



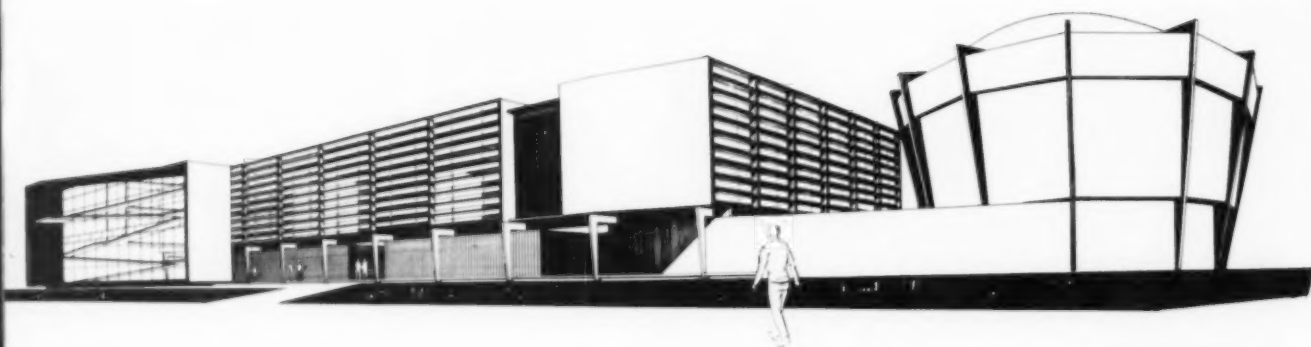
Robert I. Russin, University of Wyoming professor of art, completing marble bust of the late William Robertson Coe, the donor. COVER PICTURE shows the 600 pound wrought iron door that leads to the Western history section of the new building.

floor-to-ceiling display case holds artifacts heralding the progress of the American West.

Heat, Lighting, Other Features

The building's planners selected a two-way heating system which brings in both heated and fresh air and which exhausts the air through the same outlet. An \$8000 single control panel registers the temperature at 30 places and, with the flick of a switch, immediately controls the temperature at any desired spot in the building. This means that, by making use of the flexible wall feature, an office as small as 10 feet square can be constructed and the heat will remain uniform. Lighting facilities are also available for such a small area.

The building is lighted by 6000 four-foot fluorescent tubes, or one tube for every 20 feet of floor space. The result is uniform, high level lighting. Furniture has a low gloss finish to cut down on reflected light and reduce eyestrain. ■



PERSPECTIVE FROM RIVER STREET

Planning for the Atomic Age

Nuclear engineering center at Lowell Technological Institute

W. CHESTER BROWNE

W. Chester Browne & Associates, Boston

PLANNING for the first state sponsored nuclear engineering center in Massachusetts is well under way. To be erected at Lowell Technological Institute, Lowell, the building will cost approximately \$4.5 million and will be used in the training of nuclear engineers, nuclear chemical engineers, nuclear technicians, and nuclear reactor operators.

The institute, by virtue of its policy of supplying trained, competent personnel for the rapidly expanding electronics and nuclear developments in eastern Massachusetts, has been chosen as the site of this important forward step in the educational history of the commonwealth.

Many Involved in Work

As the entire program poses many questions affecting public health and safety, all phases of the work must receive close scrutiny and approval by many public safety and public health authorities, the Massachusetts Atomic Energy Commission, and the federal Atomic Energy Commission. Also involved in the processing of this work is the commission of administration and finance, the division of building construction, and the institute itself under the direction of President Mar-

tin J. Lydon. Together with W. Chester Browne and Associates, Inc. and Consulting Engineers Incorporated, these groups have developed a building unique in the history of state educational facilities in Massachusetts.

The structure will consist of a main building (three stories and basement) housing classrooms, laboratories, lecture halls, and offices. This portion of the building will be 138 by 243 feet, with a height of 38 feet from finish first floor to roof.

To the east of the main building will be the reactor area, a one-story wing without basement, irregularly shaped and housing the hot cells, decontamination check, storage, health offices, toilets and guard station. This wing is 60 by 128 feet, with a height of 15 feet from finish floor to roof.

Abutting this wing is the reactor area, approximately 76 feet in diameter, capped with an elliptical dome. The height of the reactor area is 36 feet from floor to base of dome, and 56 feet from floor to top of dome.

A ramp enclosure, connected to the main structure by passage at all floors, is located 21 feet in advance of the main structure and is aligned with the west end of the building. This enclosure is of a splayed rectangular shape,

21 feet at its greatest width, 86 feet long, and approximately 36 feet high from finish first floor to roof. The ramp extends to the basement.

An overpass will connect this ramp structure to the Electronics-Plastics Engineering Building now under construction.

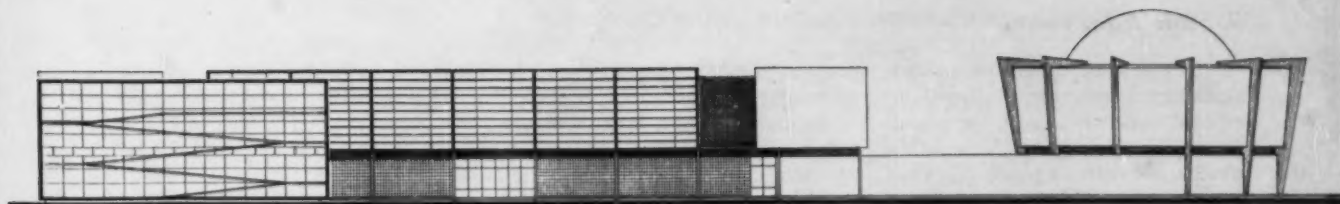
The entire building will enclose 152,452 gross square feet and 2,016,450 cubic feet.

Reinforced Concrete Foundation

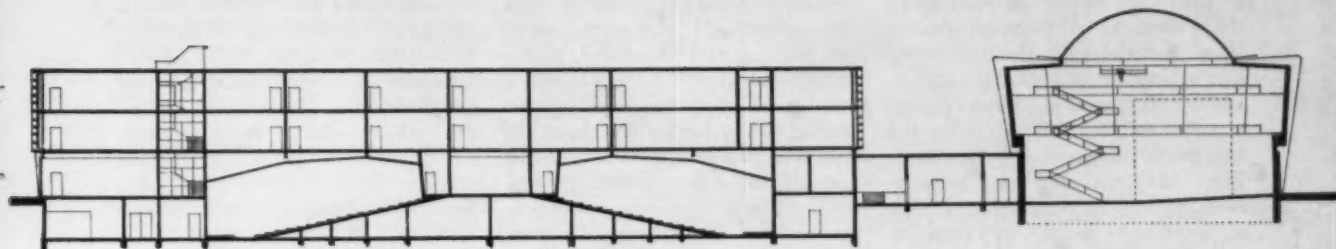
Construction will be of reinforced concrete foundation, exposed concrete bents, concrete frame, floors and roof slab. The one-story reactor area will be steel frame with a 2 inch concrete plank roof.

Exterior wall surfaces will be 6 inches of reinforced concrete other than walls of the reactor area, which will be 12 inches of reinforced concrete; some areas will be insulated metal wall panels; some glazed with steel sash, and some filled with glass block. All exterior exposed concrete will be covered with a waterproof paint.

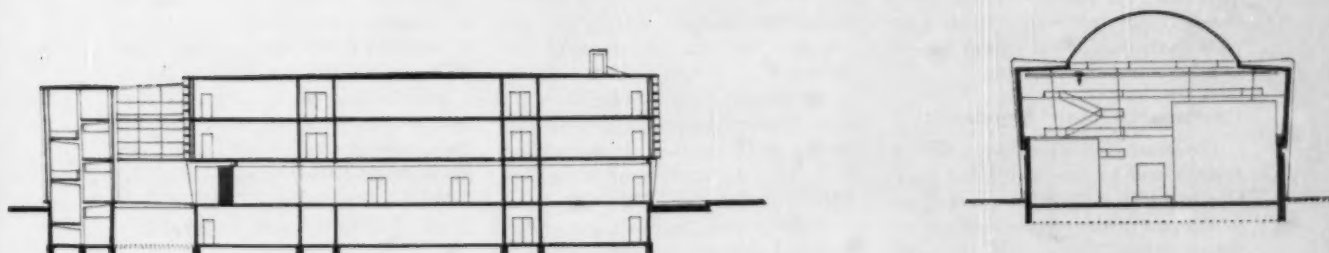
Stairs and ramps will be concrete except in the reactor area, where the stairs will be steel. Floors will be exposed concrete granolithic finish, ex-



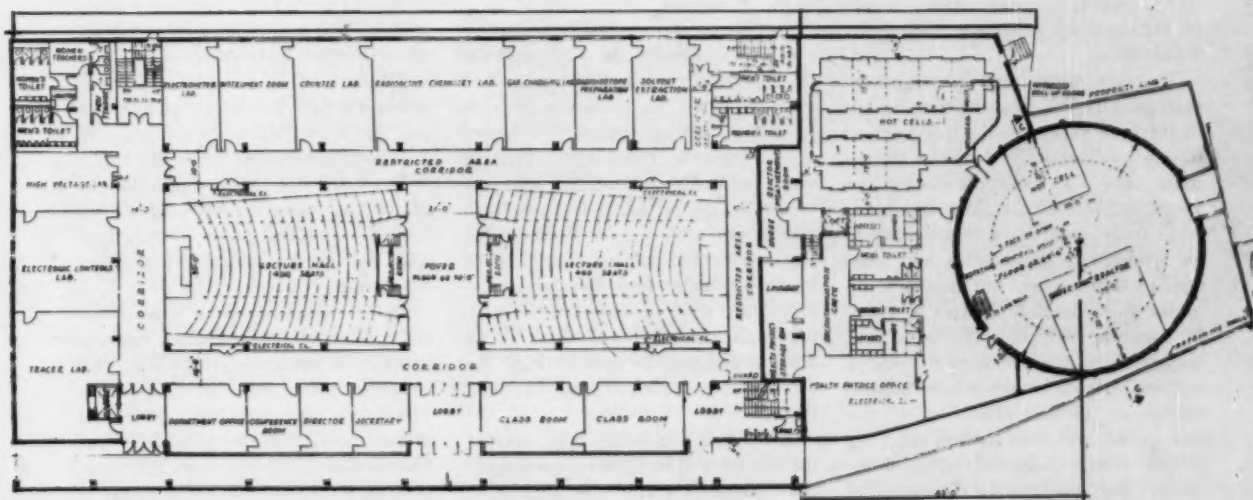
SOUTH ELEVATION



LONGITUDINAL SECTION



TRANSVERSAL SECTION



FIRST FLOOR PLAN

Atomic Age, cont.

cept where noted to be covered with asphalt or ceramic tile. Walls will be exposed masonry units, structural glazed tile, plastered and, in some instances, covered with plastic tile. Ceilings generally will be exposed, except in offices, classrooms, auditoriums and corridors, where they will be hung acoustical.

The building reaches a high degree of complexity in the development of the mechanical and electrical systems. Waste materials from the laboratories and reactor areas must be taken to holding tanks until radioactive danger is passed and they will then be ejected into drains running to the Merrimack River. Similarly, gases must be processed through a complicated system of air control before they can be wasted to the atmosphere.

Electrical service demands are heavy to service the many laboratory requirements. This demand is further increased by the installation of a closed-circuit television system complete with mobile equipment for use in all areas of the structure.

"Swimming Pool" Reactor

The heart of the building — the reactor — will be the "swimming pool" type in which the shielding and an essential part of the reactor itself are ordinary water. The several types offered commercially for instructional purposes can all, if desired, be operated as either subcritical or supercritical reactors at such lower powers (up to 1/10 watt) that dangerous amounts of radioactivity are never developed within them.

This type of reactor also may be operated at higher powers ranging up to 100 kws. When used in this manner, intense radioactivity develops within them, and the radiation causes the water to become brightly luminous. After such operation, it is still possible for students to disassemble and reassemble the reactor; but this is done under approximately 20 feet of water by means of long poles, similar to boat hooks. When it is necessary to remove a worn part, a lead box is lowered into the water, the part placed inside, the box closed, and then hoisted out.

Since some industrial types of reactors are assembled, disassembled and serviced in exactly this way, this procedure offers the advantage of

practical training. The principal disadvantage of the swimming pool type of reactor is that, even at its maximum power output, radiation developed is not sufficiently intense for some research purposes. This is why the M. I. T. reactor, which was designed primarily for research purposes, is not of the swimming pool type.

Physically, the swimming pool type of reactor consists of a tank of water approximately 25 feet deep and 25 feet wide in each dimension, plus a light metal structure (essentially a metal rack) hung from above and extending nearly to the bottom of the tank. The fuel elements, which are the essential part of the reactor and which are supplied free for educational purposes by the Atomic Energy Commission, are square aluminum tubes about 3 inches wide in each dimension and 3 feet long. Within the hollow interior of these tubes are numerous aluminum fins, which are in fact sandwiches of fissionable material — usually uranium dioxide — between two sheets of aluminum.

As received, these fuel elements are nonradioactive and require no special precaution in handling. In assembling the reactor, they are placed in the rack described previously. Also in the rack are metal control surfaces, suspended from and operated by rods extending to the top of the structure. When these fins are fully inserted into the rack, no self-sustaining fission can occur even when it contains its maximum quota of fuel elements.

In placing the reactor in operation, the tank is filled with water and the assembly first operated as a subcritical reactor. When the transition is made from a subcritical reactor to a supercritical reactor, the control fins are very gradually withdrawn and the sensitivity of the subcritical reactor is measured after each withdrawal. Mathematical calculations (to be made by the students) from the data so obtained are used to compute the position of the control fins at which the reactor would just become critical. The fins are then withdrawn to that position.

If the calculation has been correct, the reactor will be found to be slightly overcritical, but the rate of rise of power will be extremely slow and easily measurable. The power is al-

lowed to rise to the desired operating level and the fins are jockeyed about the neutral position in such way as to maintain the power output of the reactor at this level.

If the reactor is used for instructional purposes at power levels ranging up to approximately 100 kws., the fuel elements should last for several years. As the fuel within them is used up, the control fins have to be withdrawn farther and farther from the structure to maintain criticality. When, always maintaining criticality, the fins are completely removed from the reactor, the fuel elements are spent. Ordinarily, somewhat before this point, some or all of the fuel elements will have been removed and replaced by others.

Operated Under Water

As the reactor is operated in the manner described, the fuel elements become progressively more radioactive and after a few weeks' operation are so radioactive that they can no longer be handled in the open air, but must be handled completely under water or in massive lead boxes, which are lowered into the water for that purpose. These operations can be carried out perfectly safely and, since they are exactly similar to the operations required in charging an industrial reactor, they add invaluable realism to the instruction.

When the reactor is used for instructional purposes, the students manipulate the controls, vary the power levels, start and stop the reactor, and the heat and radioactivity that are generated are only incidental. When the reactor is used for research purposes, it is held at a steady power level and the materials to be investigated are lowered through the water inside the rack holding the fuel elements, or beams of neutrons are taken out through air-filled pipes, which lead from the reactor structures property out through the tank.

On a swimming pool type of reactor, the only maintenance expense required is replacement of parts. This would be infrequent and inexpensive. The major expense is the cost of the fuel elements, and this is borne by the Atomic Energy Commission. All maintenance would be done by students as part of their instruction. In this respect, the swimming pool type of re-

actor is in marked contrast to other types in which the maintenance must be done by professional nuclear technicians. This often amounts to as much as one-third the total cost of the reactor per year.

It is almost impossible for a student to damage a swimming pool type of reactor because an excessive rise in power merely results in boiling of the water, and this boiling itself stops the nuclear reaction. This safeguard gives this type of reactor a distinct advantage over other types, which can be irreparably damaged by a student error.

Safety Factors

All of the foregoing devices — piles and particle accelerators — are completely safe insofar as people outside the buildings housing them are concerned. The hazard from any of the nuclear devices described herein is extremely small. They are so designed that any tendency to go out of control automatically shuts them down. For instance, as previously explained, if the rate of power generated by the swimming pool reactor goes too high, the water boils and turns into steam. Since liquid water is an essential part of the reactor system, the reactor shuts off. There is no possibility of a release and escape of large amounts of radioactivity to affect those outside the reactor area.

All nuclear power devices — reactors or particle accelerators of any kind — can, through operator errors or mechanical failures, contaminate the immediate area around them with amounts of radioactivity, injurious to health, on long exposure. Such contamination is very troublesome but can be cleaned up by standard methods and the area restored to use; however, such contamination could put the nuclear laboratory out of service for several weeks.

The building described here is designed to localize the effects of any mishap as quickly as possible and, of course, will be equipped with suitable safety precautions for automatic detection, warning and control of danger.

A serious situation could occur while unloading spent fuel elements. If such an element were by accident lifted out of the water or from the lead box, a heavy dose of radiation would affect persons close by in a few seconds. The

area itself under these circumstances would not be contaminated.

It should be noted that these risks do not differ essentially in character from those inevitable in training personnel to use any type of industrial apparatus. A mechanical accident can be just as swift and just as serious as one caused by radioactivity. To attempt to train personnel for any kind

of industrial operation without risk would be to lose touch with reality.

An essential feature of the training of a nuclear engineer is the actual control of radioactivity and the opportunity to note errors that could be serious. The graduate will be required to assume such responsibilities in his career, and he is not suitably trained until he has assumed them. ■

FINISH SCHEDULE, NUCLEAR ENGINEERING CENTER

BASEMENT				
ROOM	FLOOR	WALLS	BASE	CEILING
MACHINE SHOP OFFICE	ASPHALT TILE	CINDER BLOCK	RUBBER	EXPOSED CONC.
MACHINE SHOP	CONCRETE	DO.	DO.	DO.
BETA-GAMA SPECTROSCOPY LAB	ASPHALT TILE	DO.	RUBBER	DO.
RADIOISOTOPE STORAGE RM.	DO.	DO.	DO.	DO.
FUEL ELEMENT LABORATORY	DO.	DO.	DO.	DO.
NUCLEAR FUEL CHEMIST LAB.	DO.	DO.	DO.	DO.
" " METALLURGY LAB.	DO.	DO.	DO.	DO.
SET UP ROOM	CONCRETE	DO.	DO.	DO.
STORAGE "	DO.	DO.	DO.	DO.
LECTURE HALLS	CONC. & ASPH. TILE	PLASTER	RUBBER	DO.
RADIO CHEMICAL LABORATORIES	CONCRETE	CINDER BLOCK	DO.	EXPOSED CONC.
LECTURE APPARATUS	CONCRETE	DO.	DO.	DO.
LECTURE PREPARATION ROOM	DO.	DO.	DO.	DO.
ELECTRICAL SERVICE RM.	DO.	DO.	DO.	DO.
BOILER ROOM	DO.	DO.	DO.	DO.
LIBRARY STACKS	DO.	DO.	DO.	DO.
CHEMICAL APPARATUS STORAGE	DO.	DO.	DO.	DO.
GLASS BLOWING	DO.	DO.	DO.	DO.
LOW LEVEL COUNTING LAB.	ASPHALT TILE	DO.	RUBBER	DO.
CORRIDORS	DO.	DO.	DO.	PLASTER
STAIRS & STAIRCASES	CONCRETE	DO.	DO.	DO.
TOILETS	CERAMIC TILE	CERAMIC TILE	CERAMIC TILE	EXPOSED CONC. PLATE
JANITOR CLOSETS	DO.	DO.	DO.	DO.
FIRST FLOOR				
ROOM	FLOOR	WALLS	BASE	CEILING
NUCLEAR REACTOR AREA	HARD CONCRETE	REINFORCED CONC. & CER. TILE	CER. TILE	DO.
HOT CELLS	DO.	BARIUM CONCRETE	DO.	DO.
HOT CELLS AREA	DO.	CERAMIC TILE THIN	DO.	DO.
REACTOR MEASUREMENTS RM.	CERAMIC TILE	DO.	DO.	DO.
NURSE	DO.	DO.	DO.	EXPOSED CONC. PLATE
LAUNDRY	DO.	DO.	DO.	EXPOSED CONC. PLATE
HEALTH PHYSICS STORAGE RM.	DO.	DO.	DO.	EXPOSED CONC.
HEALTH PHYSICS OFFICE	DO.	DO.	DO.	EXPOSED CONC. PLATE
DECONTAMINATION CHECK	DO.	DO.	DO.	DO.
TOILETS, LOCKERS & CHANGING RM.	DO.	CERAMIC TILE	DO.	DO.
ELECTROMETER LABORATORY	ASPHALT TILE	CINDER BLOCK	RUBBER	EXPOSED CONC.
INSTRUMENT ROOM	DO.	DO.	DO.	DO.
COUNTER LABORATORY	DO.	DO.	DO.	DO.
RADIOACTIVE CHEMISTRY LAB.	DO.	DO.	DO.	DO.
GAS CHARGING LABORATORY	DO.	DO.	DO.	DO.
RADIOISOTOPE PREPARATION LAB.	DO.	DO.	DO.	DO.
SOLVENT EXTRACTION LAB.	DO.	DO.	DO.	DO.
LECTURE HALLS	CONC. & ASPH. TILE	PLASTER	DO.	ACRIFICIAL TILE
PROJECTION ROOMS	CONCRETE	CINDER BLOCK	DO.	EXPOSED CONC.
POTER	ASPHALT TILE	DO.	RUBBER	PLASTER
LOBBIES	DO.	DO.	DO.	DO.
CLASS ROOMS	DO.	DO.	DO.	DO.
SECRETARY	DO.	DO.	DO.	DO.
DIRECTOR	DO.	DO.	DO.	DO.
CONFERENCE ROOM	DO.	DO.	DO.	DO.
DEPARTMENT OFFICE	DO.	DO.	DO.	DO.
TRACER LABORATORY	DO.	DO.	DO.	EXPOSED CONC.
ELECTRONIC CONTROLS LAB.	DO.	DO.	DO.	DO.
HIGH VOLTAGE LABORATORY	DO.	DO.	DO.	DO.
CORRIDORS	DO.	DO.	DO.	PLASTER
STAIRS & STAIRCASES	CONCRETE	DO.	DO.	DO.
JANITOR CLOSETS	CERAMIC TILE	DO.	CERAMIC TILE	DO.
RAMP	CONCRETE	CONC. GLASS & PANELS	DO.	DO.

Before Plans Are Put on Paper

Use of scale models helps food service director prove a kitchen or dining room layout to himself before he attempts to present it to his superiors

CHRISTINE R. PENSINGER

Christine R. Pensinger Associates
Los Angeles

THE college food service manager is expected to be an expert in all phases of the food service industry. With colleges showing an increase in enrollment each year, the food preparation, serving and dining areas must be expanded to meet the demand.

College food service directors have realized in recent years that if they are to have an efficient operation they must be allowed to play an important part in the preliminary planning. Too often the plans are completed before the food service manager is consulted, and then it is too late.

Food service directors are not architects or draftsmen, so cannot be expected to make drawings. It is usually necessary for the president and business manager, as well as the board of directors of the college, to be consulted before final plans are approved.

These executives are too busy to study detailed blueprints of the layout and often do not know how to read these drawings. Many mistakes can be prevented if the food service director can spend some time living with his new food service facility. This is now possible through the use of quarter-inch scale models of institutional food service equipment.

Remodeling

Roy Kaderli, food service director of San Diego State College, is confronted with a greatly increased number of students to feed. The present enrollment is 10,000, and he has been advised that in two years he must be prepared to feed a student body of 15,000. The president of the college and the architects have asked him for

his suggestions in planning the new cafeteria and making changes in the present facilities.

Mr. Kaderli decides to set up the entire food service facility with quarter-inch scale models. These three-dimensional models make it possible for him to live with his future operation before drawings are even started. He is able to prove the layout to himself before he presents it to his superiors.

Since he has lived with the model installation for many months, making changes for the better as they came to his mind, he is able to present his views and recommendations to the board with visual design. His key personnel also work with him in making suggestions during the preliminary planning.

Through the aid of the models, Mr. Kaderli is solving his kitchen traffic problems, developing a new method for bussing dishes to be coordinated with present dishwashing facilities. One of his immediate problems is to change the present cafeteria line into the scramble system in order to handle an increased meal load. Before any changes are made, the layout is completely worked out with the miniature models.

Since San Diego State College is planning for a maximum of 15,000 students, the food service director needs many models to set up the complete serving and dining area. All models are cataloged and filed in a metal cabinet according to the area in which they will be used. It will be two years until construction starts on the new cafeteria unit at San Diego State so

Mr. Kaderli will have adequate time to perfect his planning before the architects make the drawings.

Planning the New Facility

Larry Stillwell, food service director at Jamestown College, North Dakota, will soon have a new food service facility. Before the quarter-inch scale models were available, the architects had already made the drawings. After studying the drawings Mr. Stillwell was doubtful whether he would be happy with the proposed layout.

In order to prove to himself whether the layout was right or wrong he obtained quarter-inch scale models and set them in place on the drawings. He wanted to make some changes so the final plans were held up until he could redesign the kitchen and serving area. This was all worked out with the models.

Through a change in the method of serving he will be able to cut his student labor cost by 40 per cent. The kitchen is planned for maximum production with a minimum amount of labor.

After Mr. Stillwell had the changes made in his new food service facility the board of directors and architects met to discuss the merits of his revision. Since he had a finished three-dimensional model of the entire proposed facility, it required very little time to convince his superiors why he wished certain changes made. It was easy to prove with this visual layout how the operation would be more efficient.

In setting up the visual scale layout, use was made of special colored



Above: Roy Kaderli shown lining up chairs and workers in preliminary working model of proposed cafeteria layout at San Diego State College. Christine Pensinger, originator of the models, is assisting. Right: Larry Stillwell, food service director at Jamestown College in North Dakota, and his layout set up with the quarter-inch scale models.

quarter-inch marked flooring, 2 inch colored walls, magnetized doors, quarter-inch scale equipment used in the kitchen and serving and dining areas, as well as office and other related areas. Even quarter-inch scale people were used at their work stations, some sitting, some standing, some bending.

Industrial plants have used three-dimensional layouts in planning new construction for many years. Since these layouts are custom designed the cost is extremely high, often running into many thousands of dollars, but management has learned that savings made by visual layouts are far greater than the cost of the scale models. ■





City Planning Travels Along With Campus Planning

Sketch of the center of Flint, showing the downtown area (crosshatched, lower left) and the Cultural Center (right

center). The river front parkway and garden apartment district are shown in white in the center of the picture.



View of Municipal Courts Building, left; smoke stack, and City Hall, right.

Urban Development in Flint

rounds out community
college and cultural
center development

WELLS BENNETT

Architectural Consultant, Detroit

CLYDE E. BLOCKER

Dean, Flint Community Junior College

THE continuing stimulus of the Flint board of education, the Mott Foundation, the committee of sponsors, and many other public spirited citizens led to the expansion of Flint's community college campus and the development and execution of extensive plans for comprehensive urban planning and redevelopment between the years 1951 and 1958.

The board of education has long been a significant leadership group in Flint and the enthusiastic support of the public education system by the town's citizens, who passed additional school tax levies in 1950, 1953 and 1957, attest to the general concern and interest in education at all levels. Community support also made possible construction of the Municipal Center, the master plan survey, the Greater Downtown Flint Corporation, and the East Boulevard Development Corporation.

The spirited improvement effort began in 1951 when the new junior college campus was conceived and made a reality by the Ballenger and Mott gifts and by tax funds voted by the people. Shortly thereafter it was realized that the thriving community could hope to achieve a new civic

status with such improvements as were beginning to appear in Pittsburgh, Detroit and elsewhere. Able and dedicated citizen groups proposed great changes, and within nine years a majority of the objectives were carried out.

The building of the civic center was the fulfillment of two of the principal objectives of community betterment. One was the obtaining of up-to-date facilities for a city of 190,000 inhabitants. The building complex, consisting of a police station, municipal courts, city hall, health center, and center auditorium, was financed by a bond issue of \$6 million voted in 1953. The contract for the buildings was let in 1954 and the facilities were dedicated in 1958. The total cost of the civic center to date is \$6 million. Plans are being completed for an additional unit — a central fire station and fire department headquarters costing another \$850,000.

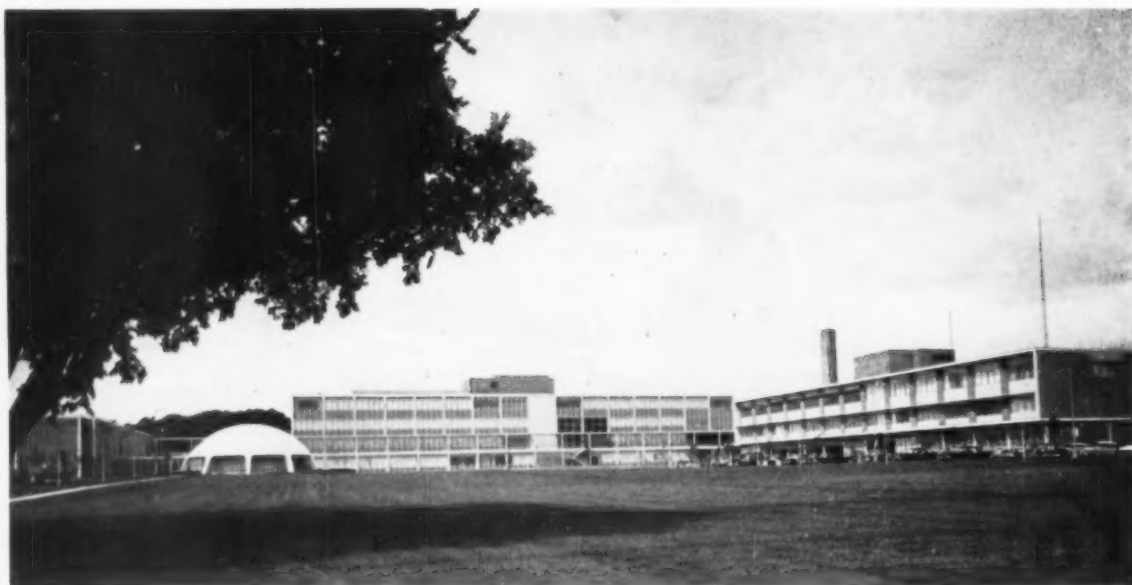
The second objective of this project, which now has been achieved, was the arranging of these facilities in a unified composition that expresses the strength and high municipal ideals of the community.

The growth of the Flint Community

College and Cultural Center, and concern for the future of the downtown area of the city, led in 1956 to another step: the formation of the Greater Downtown Flint Corporation, an organization of civic leaders, including merchants interested in improving the center of the city by such means as planting, special lighting, and the modernization of buildings and frontages.

In its search for an effective over-all approach to civic improvements the Greater Downtown Flint Corporation ordered a survey made by the Urban Land Institute of Washington, D.C. One of the principal recommendations made by the Institute was that a master plan of the entire city be developed. A comprehensive survey, including a study of the downtown area, was authorized by the City Planning Commission, the Flint City Commission, and the Flint board of education in January 1958. Ladislav Sego and Associates are presently conducting the study and expect to issue a documented master plan in the very near future. When officially approved, it will be put into effect.

The master plan will include a co-ordinated boulevard system, including



Flint's civic center showing, left to right, Health Building, Health Auditorium, City Hall, police department and jail.

the section of Longway Boulevard already in use north of the campus, and rights of way for the two state planned expressways to be built through or near the city. These features will, again, be coordinated by the provision of open spaces and planting with the river boulevard and parkway as a probable feature of the renewal development of land between river and campus.

A further link between these features and the present business district has been the special concern of an informal subcommittee of the committee of sponsors. This area had deteriorated in appearance and economic value in contrast with the beauty and utility of adjacent improvements completed or immediately projected.

The subcommittee succeeded in interesting Webb and Knapp, Inc., of New York in the project. Although this firm does not customarily handle projects in cities the size of Flint, its representatives were so impressed by the enthusiasm of Flint's public spirited citizens that it agreed to organize the East Boulevard Development Corporation, which will redevelop the 35 acres of land involved.

The keystone of the redevelopment project, which will integrate the Community College and Cultural Development, the river-front parkway and garden apartment district, the boulevard and expressway system, and the pres-

ent business center, is the U. S. Post Office project now under construction.

Other features will be moderately high office buildings for district offices of corporations and others, special lower height professional office groups, and garden apartment groups. There will also be properly zoned accommodations for light industry, a gasoline station, motels and restaurants. The visual perspectives created by these features will create an east-west axis south of the Flint River, one of outstanding civic beauty.

Outstanding Feature

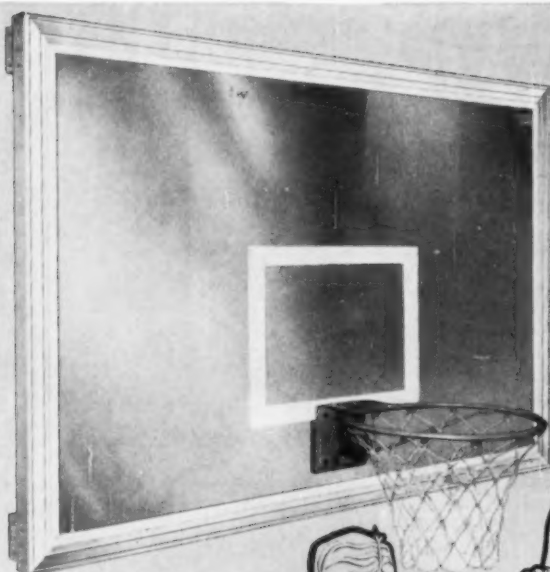
The outstanding feature of the Flint Community College and Cultural Center development is its broad base, with emphasis on cooperative community interest and planning, and widespread participation. The inclusion of the broad cultural features mentioned has aroused a response far beyond that of earning an education for education's sake. As the college grows, students will continue to have about them the best modern accommodations for training in academic and vocational fields. In addition, there are facilities and many scheduled events in such specialties as astronomy, music, the theater, and the graphic arts. The fact that the cultural facilities are extensively used by the community as well as by the students is a particular feature.

The planned extensions of business growth through redevelopment should encourage economic stability and continued building and bring in new business. The new garden apartments adjacent to the campus and the river will be distinct social and esthetic assets. The far-reaching provisions for motor car transportation and parking will make travel about town for business or pleasure workable and comfortable and should tend to balance the sometimes opposed attractions of central and suburban shopping centers.

The civic improvements that have been made or are under way already are attracting visitors to Flint and enhancing the city's reputation. The decision of the people to undertake a broad program of planning and building promises to make the city a place where people will want to live as well as work.

Already these accomplishments are strengthening the economic status and stability of the city, and they will greatly enrich its fabric as environment. It has been said that people live in cities because the best jobs for the greatest number can be found there, but probably more important, one can live more fully in a broader urban environment that provides cultural resources not available elsewhere through individual effort. ■

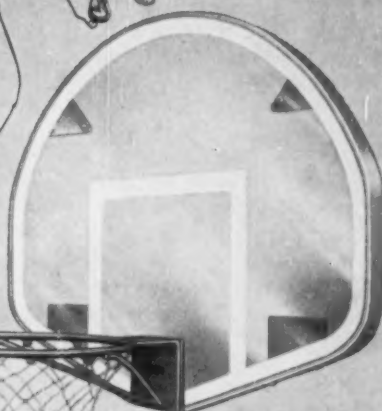
This article concludes a three-part series, which began in December.



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NEWS

Rise of 50 per Cent in War Orphan Enrollments . . . Minnesota Shows Drop in

Married Students . . . Stanford To Open Third Overseas Campus . . . Oberlin

Votes Down Radical Change in Curriculum . . . Tuition, Salaries, Gifts Rise

Minnesota Has Drop in Married Students

MINNEAPOLIS. — A reduction of more than 15 per cent in the number of married students on the University of Minnesota's Twin City campuses last fall — a reversal of the upward trend of the last 10 years — is revealed in the 1959-60 student housing bureau residence study released recently by Mabelle G. McCullough, director of the university housing bureau.

This reduction from 5296 married students in 1958-59 (22.3 per cent of the total enrollment) to 4474 in 1959-60 (18.8 per cent of total enrollment), Miss McCullough said, corresponds with last fall's reduced return to the university of students beyond the freshman year. Enrollment totaled 23,778 in 1958, 23,696 last year, an over-all decrease of .82, as compared with the 822 drop in married students.

The fall-off in married students shown in the residence study probably is linked, according to Miss McCullough, to economic pressures (higher living costs, tuition increases), which are felt more severely by students with dependents.

The residence study shows 49 per cent of Minnesota students living with parents or relatives, or owning or renting their own homes. This housing is not supervised by the university.

War Orphans Education Plan Shows Big Increase

WASHINGTON, D.C. — Veterans' enrollments under the Korean G.I. bill reached nearly 400,000 last fall compared with almost 600,000 G.I. students the previous year, the Veterans Administration reported in January.

At the same time, a smaller, newer program administered by the V.A., War Orphans Education, increased its

enrollments over last year by more than 50 per cent.

V.A. said it expects G.I. enrollments to continue to decline until 1965, when the veterans' education and training program comes to an end.

Enrollments under the War Orphans Education program went up from 4800 in the fall of 1958 to more than 7500 last fall. This is a program of financial assistance for the education of the sons and daughters of war veterans who died of service connected conditions.

Chaffey Moves to New 200 Acre Campus

ONTARIO, CALIF. — After 77 years at its present location, Chaffey College is moving to a new 200 acre campus in Alta Loma. The new campus, which only 20 months ago was a sprawling desert at the foot of the San Gabriel Mountains, now contains 14 buildings that will house more than 3000 students and 100 faculty members when classes begin this month.

College authorities organized a one-day move to the new campus, enlisting the aid of faculty and students in a plan to transport some 1600 chairs, 100 desks, 100 filing cabinets, 150 bookcases, 75 tables plus assorted laboratory instruments, books and other equipment.

Heavy pressures upon the present inadequate facility created by growing enrollments dictated the use of the new campus as soon as possible after completion.

Designed in a contemporary "ranch" style, the site has been master planned to permit expansion to 10,000 students. Four architectural firms participated in planning transformation of the rocky, foothill terrain into a beautiful and modern campus for one of the West's oldest junior colleges.

N.Y.U.'s Expenses and Appropriations Soar

NEW YORK. — New York University's total expenses and appropriations for the 1958-59 fiscal year reached a record high of \$55,384,130, George F. Baughman, vice president for business affairs and treasurer, says in his recently released annual financial report. This is an increase of \$7,547,277 over the previous year.

Mr. Baughman also states that although endowment income still represents "a fairly small proportion" of the university's total income, there has been "a consistent upturn" in endowment over the last four years.

"Its book value has grown from \$28 million to \$48 million," he points out, "and its market value has more than doubled. These funds represent an investment portfolio that contains securities of more than 200 corporations scattered throughout the United States and Canada."

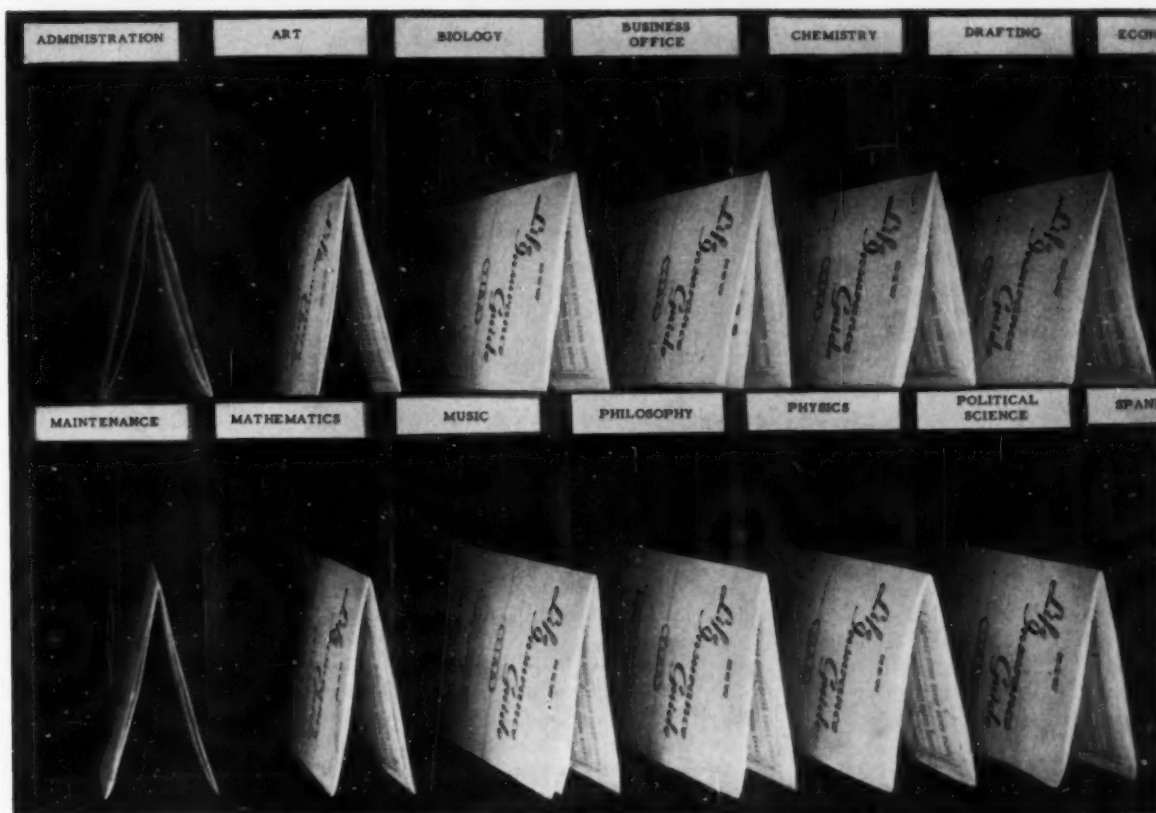
In the last fiscal year, N.Y.U. collected and deposited in banks more than \$21 million in tuition fees. (Tuition fees accounted for 42 per cent of the total income.)

Four Colleges Have Pool of Teaching Assistants

NORTHAMPTON, MASS. — Four neighboring institutions of higher education — Amherst, Mount Holyoke and Smith colleges and the University of Massachusetts — have established a joint clearinghouse to recruit and furnish teaching assistants to their faculties. The assistants are drawn from a pool made up primarily of women college graduates who are married, have children, and can work only part time.

Establishment on a permanent basis of the Office of Teaching Assistance

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has been approved by the presidents of the four institutions after a trial operation which began a year ago. During the trial period among the requests the office succeeded in filling were the jobs of assistant to the director of one of the college museums, a research assistant with special knowledge of French and interest in Africa, a research assistant on a Foundation project, laboratory aides, and readers in art, anthropology, English and political science.

The four institutions agreed to set up the office on a trial basis after a questionnaire sent to 1165 women in Amherst, Northampton, Holyoke and other neighboring cities and towns revealed that many of these women had advanced degrees and past teaching experience and were available to work part time.

Of the 366 who answered the questionnaire, 287 were college graduates, 76 held master's degrees in the arts or sciences, and 12 were Ph.D.'s. A total of 119 had taught in the past. The number of women with children under six totaled 148, and many indicated they would be interested in working, if not immediately, later when their children were older.

Stanford Establishing Third Overseas Campus

STANFORD, CALIF. — Negotiations are nearing completion for establishment of Stanford University's third overseas campus at Tours, a cultural and historical center in the middle of the French chateau country, President Wallace Sterling has announced.

The university is planning to lease from the French Ministry of Education a new building overlooking the Loire River at the northern entrance to the city. It will provide rooms for 80 students, two faculty apartments, and classrooms.

Instruction would begin in September 1960, simultaneously with the recently announced Stanford campus in Florence, Italy. The university's branch campus near Stuttgart, Germany, opened in June 1958.

"We had hoped to inaugurate a campus in France in 1961, but the wonderful cooperation of the French government has put us a whole year ahead in our plans," President Sterling declared.

"When the three campuses are in operation more than 30 per cent of our students will be able to study overseas

Gets Check for \$18 Million as Housing Loan



SAN FRANCISCO. — Officials of the federal government and the University of California participated in a formal ceremony in which a check for \$18 million was issued to the university in connection with the College Housing Loan Program. The ceremony took place recently at the Sheraton-Palace Hotel, San Francisco.

From left to right in the photograph are: William Bach, Community Facilities Administration engineer, Washington, D.C.; Dorothy Boyce, execu-

tive officer to Commissioner John Hazeltine, C.F.A., Washington, D.C.; Paul Emmert, regional director, C.F.A., Region VI, San Francisco; Annabelle Heath, regional director, Housing and Home Finance Agency, Region VI, San Francisco; Robert M. Underhill, vice president-secretary and treasurer, University of California; Mortimer Smith, regent of the University of California and president of the California Alumni Association, Berkeley campus.

at some point in their undergraduate careers. For so large a cross section of the undergraduate student body to have this opportunity makes this a truly pioneering venture in American education."

Students are chosen from sophomores, juniors and seniors in the regular Stanford student body. The program is not limited to language majors but is open to students in all fields. Each group spends six months abroad. Courses in history, literature, architecture and other subjects that benefit from the European setting are taught by Stanford professors. There is an integrated series of lectures by European professors, journalists, public officials, and cultural leaders. Language is taught by native instructors.

The centers are self-supporting. Regular Stanford tuition and room and board fees are charged. These cover passage over by chartered plane plus several major academic field trips. The students return on their own.

Proposes Unique Medical Center for Michigan State

EAST LANSING, MICH. — A new medical center, unusual in scope and design and with international implications, has been proposed at Michigan State University.

The proposal was prepared by a university committee headed by the provost, Dr. Paul A. Miller. The board of trustees accepted the report and asked for continued study of the long-range plans.

Under the program preclinical students in medicine, veterinary medicine, medical technology, nursing, dentistry and public health would share the same classrooms, laboratories, equipment and, to some extent, teachers, by means of a central basic medical sciences facility.

The report continues:

"There would be no multiplication of preclinical departments simply, for example, to preserve the distinction



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between human and animal anatomy or physiology. A central medical library would serve the center. Research facilities also could be shared because animals are used for most medical research . . . Not only would costs be reduced significantly by this sharing, but there would be great gains in interdisciplinary communication and in productive efficiency by having the various kinds of medical scientists housed together and working side by side."

Included in the medical center, at first, would be a college of medicine,

college of veterinary medicine, a school of medical technology, and a school of nursing. Added later would be a college of dentistry, a curriculum in public health, and a medical research institute. Special attention to the problems of aging would be given in a geriatric hospital.

Ripon's Loan Program Parallels N.D.E.A.'s

RIPON, WIS. — A \$105 increase in tuition and fees has been approved by the Ripon College board of trustees

for next year, according to President Fred O. Pinkham. This will bring the cost per year for students to \$1875.

The net effect of the tuition increase will be to decrease the margin between the actual "per student cost of education" and income from student tuition and fees, which this year will amount to \$400 per student, Dr. Pinkham said.

At the same time, the board approved a Ripon College student loan program designed to parallel the N.D.E.A. loan program, but without requiring the controversial loyalty oath. The college will loan funds under the same favorable terms as the federal program, including the 3 per cent rate of interest and debt forgiveness for public school teachers.

Big Building Project for Hampton Institute

HAMPTON, VA. — Plans for a \$2,-041,500 building program at Hampton Institute have been announced by Dr. Saul Perdue, chairman of the buildings and grounds committee of the board of trustees.

Hilyard R. Robinson of Washington, D.C., is the architect for the four-phase building project being undertaken at this time. It should be completed within the next three or four years, Dr. Perdue declares.

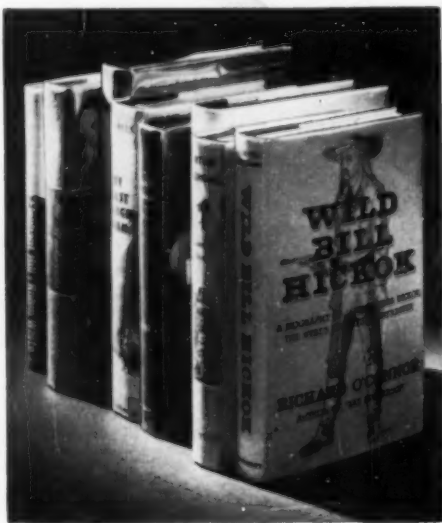
The buildings approved for immediate construction include a new million dollar communications-music building, a home economics-nursing building, a three-story addition to the science building, and renovation of a general classroom building.

Oberlin Rejects Change in Curriculum

OVERLIN, OHIO. — The faculty of the college of arts and sciences at Oberlin College has rejected, by a 64 to 51 margin, a proposal to adopt a revolutionary three-course, three-term curriculum.

The proposal, presented to the arts and sciences faculty by an ad hoc committee appointed a year ago to study the plan and make recommendations, called for abandonment of the college's traditional two-semester academic year, in which students ordinarily enroll in about five courses each semester, and for adoption of a calendar of three academic terms. Students would, under the proposed system, concentrate

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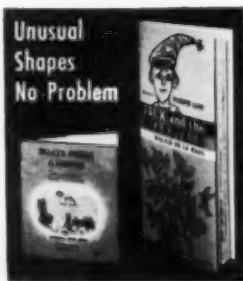


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their study in three courses each term. The plan would have permitted class periods up to 80 minutes long, but might also have included 50 minute classes meeting five days a week.

The curriculum change would have applied only to the college of arts and sciences, with its enrollment of about 1600, and not to Oberlin's conservatory of music or graduate school of theology.

The negative vote followed extended discussion of the so-called 3-3 Plan in open faculty meetings and committee hearings. The initial vote

at the meeting was 58 to 55 in favor of the plan; the decisive vote, following a motion to reconsider, was 64 to 51 against it.

Esso Foundation Cited for Service to Education

NEW YORK. — The Esso Education Foundation has received the Alpha Kappa Psi Foundation's annual award for distinguished service to higher education.

The bronze tablet was presented to David A. Shepard, executive vice

president of the Standard Oil Company of New Jersey, by Dean Joseph H. Taggart of the graduate school of business administration at New York University, as a feature of Education Day at the 64th Congress of American Industry, sponsored by the National Association of Manufacturers.

Selection of the Esso Education Foundation was the unanimous decision of a committee which was composed of Dean Taggart, Dr. G. Rowland Collins, dean emeritus of the graduate school of business administration at New York University, and Dr. Lawrence C. Lockley, dean, school of commerce, University of Southern California, Los Angeles.

The Esso foundation is the third recipient of the award, previous winners being General Electric Company (1957) and United States Steel Foundation (1958). Alpha Kappa Psi, national professional fraternity in commerce and business administration, established its foundation for education and research in 1957.

During its four years of existence the Esso foundation has made grants totaling more than \$5.5 million to privately supported colleges and universities.


Say Needs of Private Colleges Can Be Met

NEW YORK. — Future financial needs of private colleges and universities can be met, a panel of university administrators and fund raising experts predicted recently.



Long-range planning and professional fund raising aid are the solutions proposed by the panel at a meeting of the American Association of Fund-Raising Counsel, Inc. in New York.

Professional fund raisers can provide colleges and universities with services they are unable to do for themselves, concluded the panel. Its members were: Dr. J. Ralph Murray, president, Elmira College, Elmira, N.Y.; Dr. Howard Jones, vice president, Colgate University, Hamilton, N.Y., and Austin V. McClain and Harold R. Thompson, members of the A.A.F.R.C.'s speakers bureau. Dr. Z. I. Zwingle, vice president, Cornell University, Ithaca, N.Y., moderated the program.

"Lack of patience, understanding, inadequate future planning, and manpower shortages contribute to the university's present financial predicament," said Dr. Murray. "Fund raising



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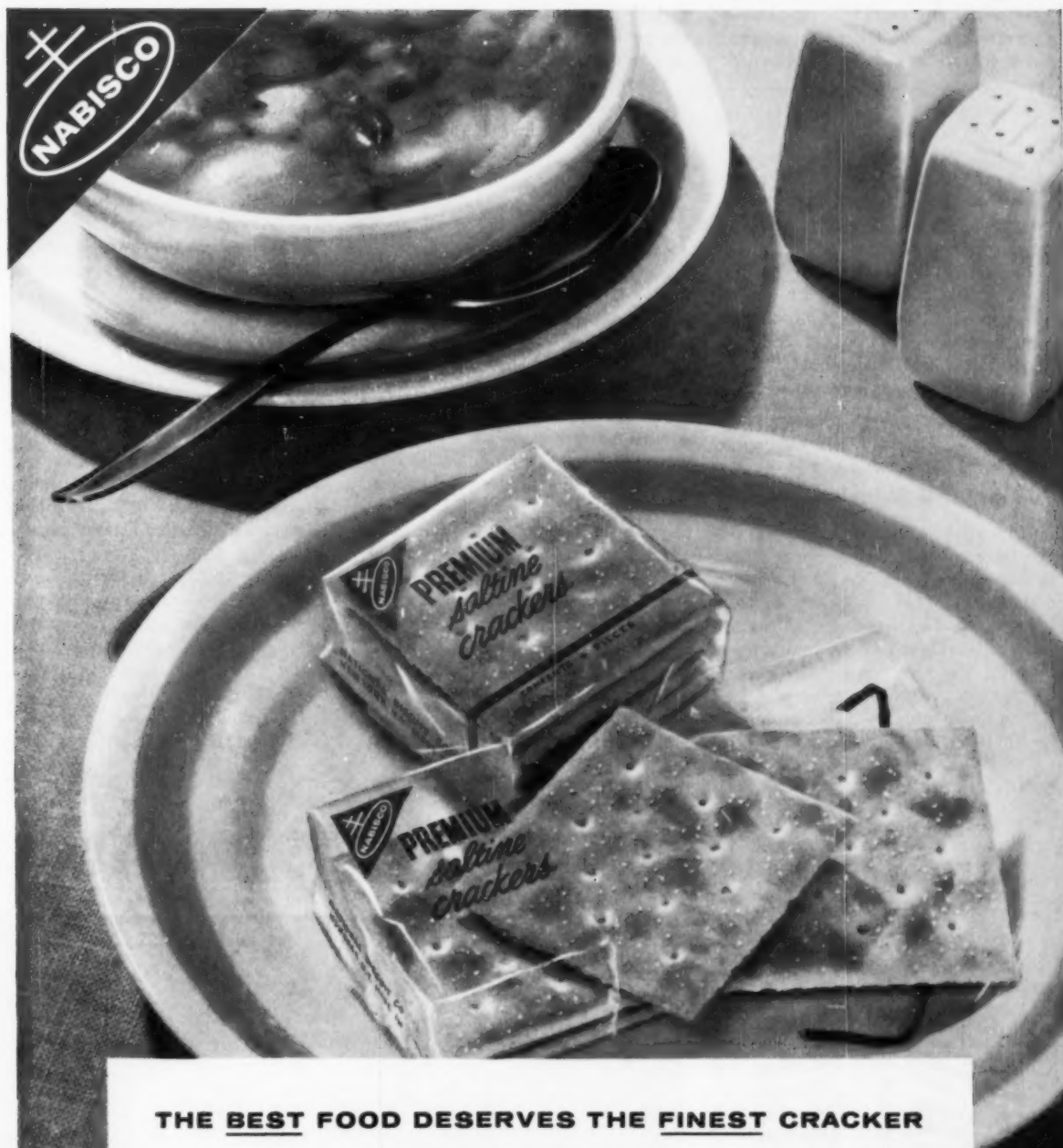
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experts must first accept the job of educating school administrators to the need for an objective appraisal of their goals," he added.

Speaking for the fund raiser, Mr. Thompson pointed out that "administrators must examine the needs and plans of their schools in terms of past, present and future before starting new programs. The short-term look no longer accomplishes required goals."

University and college enrollment now at 3.3 million is expected to reach 4.5 million by 1965, and budgets for higher education alone may add up to \$9 billion. An estimated \$1.25 billion annually must come from philanthropic sources.

Barnard Increases Tuition and Salaries

NEW YORK. — Barnard College trustees have voted a \$240 per year raise in tuition (including fees) and a general increase in the faculty salary scale to be provided by the additional funds, President Millicent C. McIntosh announces. The increases become effective for the 1960-61 academic year.

The yearly tuition and fees, currently \$1110, will be raised to \$1350

(which includes \$35 in fees). The charge for room and board will remain unchanged.

Faculty salary scale minimums will be increased by amounts varying from \$500 to \$1000 per year, according to rank.

Lehigh's Gifts Total \$1,169,585

BETHLEHEM, PA. — Gifts and bequests to Lehigh University for the 1958-59 fiscal year totaled \$1,169,585, according to a report issued recently.

For the fifth consecutive year, Lehigh received more than \$1 million, bringing its five-year giving total to approximately \$10 million.

An increase in the number of contributors to Lehigh's annual giving fund was reported by Edward A. Curtis, chairman. A total of \$354,717 was contributed toward the goal of \$350,000. In presenting the report, Mr. Curtis said that 6048 contributors include alumni, parents, friends and industry. The previous high was 5637 during the 1953-54 drive.

Funds raised through the annual giving fund last year will provide \$100,000 endowment for a distin-

guished service professorship, \$150,000 for new laboratory equipment, and \$100,000 for new recreational fields on the campus.

Gifts from industry for endowment funds, equipment and scholarships amounted to \$266,631. Gifts from alumni and friends for living accommodations, faculty salaries, and general endowment amounted to \$247,209. Bequests to the university during the year increased endowment funds by \$125,931.

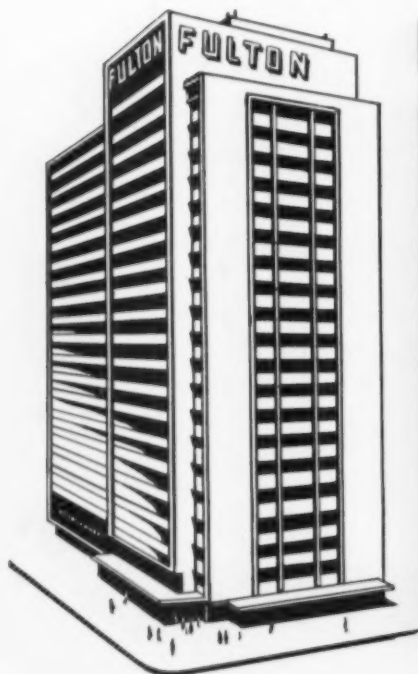
Swift Scholarships for Employees' Children

CHICAGO. — The Swift & Company Foundation will provide 10 four-year merit scholarships to talented sons and daughters of Swift employees, R. W. Reneker, vice president of the company and of the Foundation, has announced.

The Swift Merit Scholarship program will be on a continuing basis. First scholarships will go to students entering U.S. colleges next fall. The action is in cooperation with the National Merit Scholarship Corporation.

The scholarships may be as high as \$1500 per year for a four-year

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period. The exact amount is based on financial need, and is determined from information furnished by the student's parents.

In addition, the college in which the Swift Merit Scholar enrolls will receive an annual grant up to \$500, depending upon the tuition — the lower the tuition, the higher the payment.

Natural born or legally adopted children of Swift employees or pensioners will be eligible, as will children of deceased pensioners or employees.

Salaries and Tuition Going Up at Penn State

UNIVERSITY PARK, PA. — To help provide needed salary adjustments from limited funds available, President Eric A. Walker of the Pennsylvania State University has instructed administrative officers of the university to effect every possible economy within the bounds of a sound educational and research program.

With a state appropriation of \$34.2 million approved in response to an original request for \$43.9 million, proposed university budgets are now under revision. Revised budgets were expected to be completed in January,

with salary adjustments effective February 1.

Salary increases for faculty and non-academic staff, Dr. Walker pointed out, will be made on the basis of individual merit.

An increase in tuition at Penn State, effective September 1, is expected to provide an estimated \$3.7 million during the biennium, Dr. Walker noted, but the total amount of funds available for the biennium is still short \$6 million of "the minimum amount needed to do the job we believe the people of Pennsylvania need and want us to do."

Colorado Seeks Funds for Land Acquisition

DENVER. — The University of Colorado board of regents has approved the first step in a long-range land acquisition program for expansion of the Boulder campus.

The university will ask the governor and legislature for a capital appropriation of \$250,000 to:

1. Enter into long-term land purchase contracts for approximately 250 acres of raw land in the vicinity of the present campus.

2. Enter into options for the acquisition of up to 1280 acres of land within a 10 mile radius of Boulder for research and related purposes.

The recommendation followed a report by John Carl Warnecke and Associates, an architectural and planning firm, that the university should take steps to accommodate an ultimate maximum enrollment of 25,000. The present Boulder enrollment is about 10,500.

The report stated that the enrollment figure probably will not be reached for several decades, but that the university should start immediately to acquire the fast disappearing raw land need for such an expansion.

Sarah Lawrence College Starts Expansion Plan

BRONXVILLE, N.Y. — The first step in Sarah Lawrence College's expansion plan has been taken with the start of construction on three \$1.2 million residence halls. The buildings, expected to be completed by September, will house 150 students.

Conforming to the sloping site, the buildings will be of split-level design with three stories in front and four

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in the back. The dormitories will be in three units, faced with red brick, and connected by glass enclosed staircases.

The expansion plan will put into effect an enrollment increase at the rate of 50 more students a year, beginning next fall, to a total student body of 550 in 1963.

The Sarah Lawrence plan for the enlarged student body retains the present system of individually planned curriculum, with 90 per cent of all classes an average of 10 in size. It reaffirms the principle of individual guidance by the faculty done as an

essential component of the new program. Twelve new experimental courses will be developed for sophomores and juniors with 30 to 40 students in each class.

Future plans call for additional buildings, including a new library, a building for the plastic arts, new and enlarged facilities for the teaching of science, and a music building to serve as a workshop for student composers and players.

The first step, now under way, is the building and furnishing of the three new dormitories and the recon-

struction of the dining facilities and enlargement of the library. Total cost of the first step will be approximately \$1.7 million. The college has been granted a government loan of \$880,000 and has already received more than \$300,000 in gifts. A capital fund drive has been inaugurated to raise the additional half million dollars needed.

Inter-Institutional Councils Link State Colleges in Colorado

DENVER. — The Colorado Association of State-Supported Institutions of Higher Education has established eight inter-institutional councils to provide for greater cooperation and coordination of its programs and services.

The new program was announced recently by President William E. Morgan of Colorado State University, chairman of the association.

The program will be carried out by the formation of separate councils consisting of deans of faculties, graduate school deans, business managers, admissions directors and registrars, extension deans and directors, deans of students, public information officers, and a group on research in natural resources.

The state supported institutions involved are: University of Colorado at Boulder, Colorado State University at Fort Collins, Colorado State College at Greeley, Colorado School of Mines at Golden, Western State College at Gunnison, Adams State College at Alamosa, and Fort Lewis Agricultural and Mechanical College at Durango.

In announcing the new program, the association said that the various councils will be concerned with:

1. Effecting closer cooperation among the public colleges with the objective of getting optimum utilization of their faculty and facilities and to avoid unnecessary duplication of programs.
2. Providing closer exchange of information among the institutions of higher education and keeping people of the state better informed about the educational and service programs of the state schools.
3. Strengthening the cooperation of these institutions with the public junior colleges, the private colleges, and the secondary schools of the state.

Specific problems already referred to these groups include a detailed

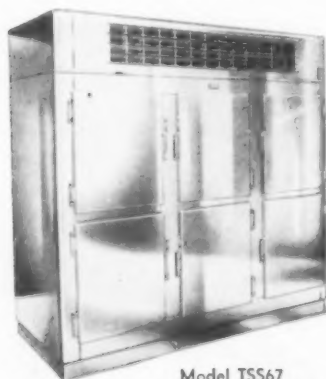
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2. He threw one of the blocks fiercely at pussy. Hettie caught up the cat. "No, no, no!" said she, "you sha'n't hurt pussy."

3. Herbert began to cry. "It had such a fine heating system," he exclaimed.

4. "Did you use Barnebey-Cheney activated charcoal filters to permit 100% recirculation of inside air?" asked Hettie.

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analysis of the extent of program duplication in the colleges, what should be done to encourage the top students in high school to attend college, information on drop-out rates, and the reasons why good students leave college.

The Colorado Association of State-Supported Institutions of Higher Education has been in existence for more than 35 years. Since 1955, it has been conducting an extensive series of studies for the colleges and for the state through its office of inter-institutional studies directed by Dr. James I. Doi of the University of Colorado.

Largest Educational Building Program in U.S. Under Way at U.C.L.A.

LOS ANGELES. — The largest building program ever undertaken by an educational institution in the United States is under way at the University of California at Los Angeles. The reason: By 1967 U.C.L.A. expects an enrollment of 27,500 students, the result of Los Angeles' mushrooming population.

Planning ahead for that date, U.C.L.A. began a building program in 1949 that by 1967 will have cost more than \$370 million. This staggering amount will have involved almost 150 separate projects, including both individual structures and major additions to existing buildings.

Placing the scores of projects on U.C.L.A.'s 411 acres, while providing sizable landscaped courts and recreational areas, has dictated a slowing down of the outward growth and a beginning of an upward push. Instead of the three-story and four-story buildings of the past, new structures will go as high as 12 stories (13 stories was until recently the height limit in Los Angeles).

The master plan divides the campus into three major use areas: academic in the eastern segment, recreational in the center, and residential in the west. These segments run north and south.

In an area as dependent on automobiles as Los Angeles, 27,500 students will mean a heavy demand for parking. Eight multilevel parking structures and several surface parking lots providing a total of 15,000 parking spaces are being planned to ring the campus as a solution to this problem. (The first of these, a six-level structure for 891 cars, is currently under construction.)

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CLEVELAND. — Western Reserve University, Case Institute of Technology, and the Cleveland Museum of Natural History last month announced plans for an expanded program of co-operation in the fields of geology and astronomy to begin July 1.

The new program will provide for sharing of staffs and facilities in these scientific fields by the three institutions, with a consequent improvement in operations, thus permitting an ex-

pansion in instruction, research and community service. The program results from the long-term enthusiasm and substantial financial support of Mr. and Mrs. Maynard H. Murch, in the field of natural history, which makes the new working relationship possible.

The agreement provides for joint appointments in geology and astronomy, the exchange of facilities and collections for the greatest possible community benefit, and the exchange of courses among students at Case and Reserve. Under this agreement, Wes-

tern Reserve will become administratively responsible for all instruction and research in geology. Case will assume the responsibility for all instruction and research in astronomy.

The agreement between the three institutions further states: "Western Reserve University will donate the telescope and dome presently on its campus to the Museum of Natural History and the geological collections presently at both educational institutions, not required for regular use, will be placed on loan with the Museum of Natural History."

These collections and facilities will be available to the general public at the museum, and will continue to be available for instruction with research in geology and astronomy by the teaching institutions. Plans for the installation and public use of the Reserve telescope at the museum are being developed, Director William E. Scheele of the museum stated.

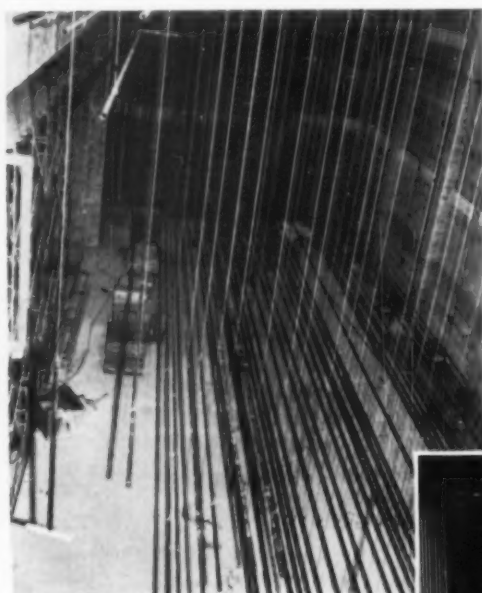
N.D.E.A. Offers Fellowships for 1500

WASHINGTON, D.C. — Commissioner of Education Lawrence G. Derthick has announced approval of 406 programs of graduate study involving 1500 three-year fellowships authorized by the National Defense Education Act. "These approved programs of 136 graduate schools are designed to increase the nation's supply of college teachers and to expand graduate facilities," Mr. Derthick said.

The fellowship awards, provided under Title IV of N.D.E.A., are for study during the 1960-61 academic year. Already studying in the nation's colleges and universities are a thousand graduate students awarded fellowships last May. A total of 5500 three-year fellowships are authorized under the act over a four-year period.

The approved programs were selected from 918 proposals submitted by 155 institutions, which requested 5370 fellowships. A 12 member advisory committee of distinguished educators from colleges and universities and a panel of five consultants from graduate schools reviewed all proposals and made recommendations to the commissioner. All approved programs lead to the doctoral degree and, as required by the act, either establish new or expand existing graduate facilities.

Several months ago the National Science Foundation quietly inaugurated a program providing matching



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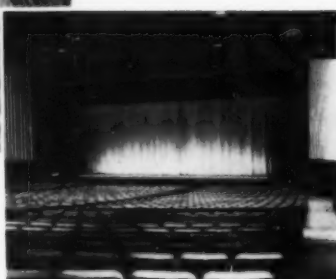
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View of the modern Ivanhoe Elementary School in Gary, Indiana, showing its walls of Natco Uniwall. The buff colored vertical walls show Uniwall's exterior rugg-tex finish. The light green panels under windows show a unique use of Uniwall's interior face installed in reverse. Architect: Jos. P. Martin & Assoc.

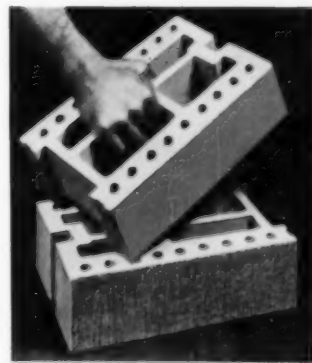
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grants for construction or structural improvements of scientific research laboratories in colleges and universities. The first grants, totaling \$2 million, will be announced about the end of March on the basis of proposals submitted before Dec. 1, 1959.

Trading Stamp Firm To Aid Colleges

NEW YORK. — The Sperry and Hutchinson Company, the nation's oldest and largest trading stamp firm, last month announced it has initiated a "five-point aid-to-education" program.

1. S&H will match the donations of its employees to public and private educational institutions, including elementary, secondary, undergraduate and graduate schools. According to the Council for Financial Aid to Education, this matching grants plan is the broadest in existence in the scope of educational institutions eligible for grants.

2. S&H will make annual grants to colleges and universities to develop or improve their programs in economics and business administration.

3. S&H employees who wish to continue their education may apply for financial aid, and S&H will award up to 10 four-year scholarships annually to high school students who are the children of employees.

4. Three scholarships of \$1500 each for studies in the area of food distribution will be given annually to employees of food stores that give S&H green stamps.

5. Four four-year scholarships "for the public" of \$4000 each will be awarded annually to high school students through a series of competitive examinations.

Research Corporation Makes 48 New Grants

NEW YORK. — Grants for 48 basic scientific research projects at colleges and universities in the U. S., Canada and Israel were announced last month by Research Corporation, a nonprofit foundation.

Basic research projects in physics, chemistry, astronomy and the biological sciences will be aided by these grants, according to Charles H. Schauer, director of grants. U. S. colleges and universities in 24 states, as well as the Lowell Observatory, Arizona, the University of Western Ontario, and the Hebrew University,



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Israel, were awarded grants for scientific research.

Ranging from \$1100 to \$12,000, the grants will be principally used to purchase experimental equipment and supplies and for fellowship stipends on research projects undertaken by individual scientists.

Of the 48 current grants, 34 will aid advanced research projects in chemistry, nine in physics, two in astronomy, and three in the biological sciences. The research subjects vary over a broad range from a study of the vegetation on Mars to the isolation and structure determination of the new tranquilizing drugs.

Established as a nonprofit foundation in 1912, Research Corporation was founded by Frederick Gardner Cottrell, a scientist, teacher and inventor, who donated the proceeds from his inventions in the electrostatic precipitation of gas particles as an endowment to make grants for basic scientific research. Since 1912 more than 2500 scientists have been aided by grants to institutions in the U. S. and abroad totaling more than \$13 million.

Pitt Announces Tuition Increase

PITTSBURGH. — The University of Pittsburgh has announced tuition increases in all schools effective with the fall trimester of 1960.

For most undergraduate and graduate students the increase will be \$5 a credit hour, up from \$23 a credit to \$28 a credit. Comparable increases will be made in eight of the 13 professional schools, where flat tuition rates are charged.

Average President Has 10.1 Year Term

UNIVERSITY PARK, PA. — The average presidential term in colleges and universities founded before 1900 is 10.1 years, a national study discloses.

Pennsylvania State University, which next month will observe the 100th anniversary of Evan Pugh's inauguration as the school's first president, has a record of 8.1 years for presidential tenure.

Only three of the 11 men who preceded the current incumbent, Eric A. Walker, served for more than 10 years. Dr. Walker became president in October 1956, succeeding Milton S. Eisenhower, who served six years.

NAMES IN THE NEWS

Dr. Philip H. Putnam, director of Ventura Junior College in California, has been named superintendent and president of Compton College, Compton, Calif. He assumes his new duties this month under terms of a four-year contract.

Kenneth Hawkins has been named manager of Western Michigan University's campus stores, succeeding **John M. Thompson**, who retired recently after serving the university for 20 years.

Eugene A. Kogl is the new head of the division of construction, contracts and civil engineering of the physical



Eugene Kogl



W. E. Soderberg

plant department at the University of Minnesota, according to a recent announcement by **Roy V. Lund**, supervising engineer. Mr. Kogl succeeds **Harry L. Wilson**, who retired recently. **Warren E. Soderberg** has been appointed chief of the division of heating systems, maintenance and operation. He succeeds **Leslie L. Wood**, who resigned in June. Mr. Soderberg, a former member of the physical plant staff at the University of Minnesota, had left in 1955 to become director of buildings and grounds at Fairview Hospital, Minneapolis.

Haskell R. Patton, the controller and business manager of Carnegie Institute of Technology, Pittsburgh, has been named to the position of vice president for business affairs, **President J. C. Warner** announces. Mr. Patton will continue in his position as controller and business manager, the post he has held since joining the Carnegie staff in 1938.



Haskell R. Patton

Foster Coffin, director emeritus of Cornell University's student union, Willard Straight Hall, was the recipient of the New York University Medal. The circular bronze medal, suspended from a chain, bears on its

(Continued on Page 74)



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National Federation of College and University Business Officers Associations

President: Charles H. Wheeler III, University of Richmond; secretary: Kenneth Dick, University of Idaho.

National Federation Consulting Service, 343 S. Dearborn St., Chicago. George E. Van Dyke, executive director.

Assembly: July 6-8, French Lick, Ind.

American Alumni Council

President: George J. Cooke, Princeton University; executive director: Ernest T. Stewart, 1785 Massachusetts Ave., N.W., Washington 6, D.C.

National Association of Educational Buyers

President: Carl A. Donaldson, University of Nebraska; executive secretary: Bert C. Ahrens, 1461 Franklin Ave., Garden City, N.Y.

Convention: May 2-4, Hilton Hotel, Pittsburgh.

Canadian Association of University Business Officers

President: J. A. Wheeler, bursar, Mount Allison University; secretary-treasurer: D. S. Claringbold, treasurer, Hart House, University of Toronto.

College and University Personnel Association

President: Orie Myers, Emory University; executive secretary: Donald E. Dickason, University of Illinois. Permanent headquarters, 809 S. Wright St., Champaign, Ill.

Convention: Aug. 7-10, Carnegie Institute of Technology, Pittsburgh.

National Association of Physical Plant Administrators of Universities and Colleges

President: R. F. Gingrich, Kansas State University; secretary-treasurer: John H. Sweitzer, Earlham College, Richmond, Ind.

Convention: May 8-11, Statler Hotel, Boston.

Association of College and University Housing Officers

President: Joseph P. Nye, Columbia University; secretary-treasurer: A. Thornton Edwards, Kansas State University.

Convention: July 31-Aug. 3, Indiana University, Bloomington.

Association of College Unions

President: Chester A. Berry, University of Rhode Island; secretary-treasurer: Edgar A. Whiting, Cornell University; editor of publication: Porter Butts, University of Wisconsin.

Convention: April 24-27, Indiana University, Bloomington.

National Association of College Stores

President: Sam Hanna, DePauw Bookstore, Greencastle, Ind.; general manager: Russell Reynolds, Box 58, 33 West College Street, Oberlin, Ohio.

Associations of College and University Business Officers

American Association

President: Paul G. King, Tennessee A. & I., Nashville; secretary-treasurer: Sinclair V. Jeter, Clark College, Atlanta, Ga.

Central Association

President: Harlan Kirk, Lawrence College, Appleton, Wis.; secretary-treasurer: James J. Ritterskamp Jr., Washington University, St. Louis.

Eastern Association

President: Vincent Shea, University of Virginia; secretary-treasurer: Kurt M. Hertzfeld, Boston University.

Convention: Dec. 4-6, White Sulphur Springs, Va.

Southern Association

President: Clarence Scheps, Tulane University; secretary: C. O. Emmerich, Emory University.

Convention: April 3-5, Edgewater Gulf Hotel, Edgewater Park, Miss.

Western Association

President: Ernest Conrad, University of Washington; secretary: James Brainerd, Menlo College.

Convention: May 1-4, Salt Lake City.

American College Public Relations Association

President: Marvin G. Osborn Jr., Washington University, St. Louis; executive director: Frank L. Ashmore, 1785 Massachusetts Ave., Washington, D.C.

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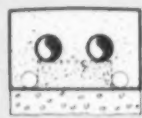
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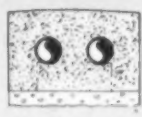
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(Continued From Page 71)

face the N.Y.U. seal. The medal is presented to distinguished visitors to N.Y.U. Mr. Coffin is the 16th recipient.

Paul Naton, vice president and secretary of Mills College, Oakland Calif., resigned recently to go into the investment securities business in San Francisco. At Mills College he had been the executive administrator in charge of financial development and had headed the over-all public relations program at the college for 10 years.

Paul V. Sangren, president of Western Michigan University since 1936, announced recently that he will retire at the end of the present academic year. He cited reasons of personal health.

Alvin Appel, formerly affiliated with the New York division of Ketchum, Inc., has recently been appointed to the staff of the Parsons School of Design in New York City in the capacity of chief accountant.

Philip H. Powers, civic leader and recently retired president of West Penn Power Company, Pittsburgh, has been appointed assistant chancellor for development at the University of Pittsburgh. Mr. Powers will have over-all direction of public relations, alumni relations, fund raising, and governmental relations.

Charles H. Leckrone, formerly assistant to the president of McKendree College, Lebanon, Ill., is now assistant business manager at Evansville College, Evansville, Ind. He had formerly served as business manager at Kentucky Wesleyan College, Owensboro.

Harold Taubin, former executive director of the Metropolitan Planning Commission of Chatham County-Savannah, Ga., has been appointed director of the University of Pennsylvania's recently established planning office. In his new post, Mr. Taubin will coordinate campus planning and will maintain liaison with the university's neighbor institutions, the West Philadelphia Corporation, and all city, state, interstate, regional and federal agencies on programs affecting the physical development of the university and its environment.

Dr. Owen Meredith Wilson, president of the University of Oregon, has been named president of the University of Minnesota. His appointment will become effective July 1. He succeeds J. L. Morrill, who is retiring.



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Assistant Business Manager — Ten years experience supervising buildings and grounds department, food service and dormitory administration; college education in engineering and business administration; excellent references; available on 30 days notice; work record promptly furnished. Write to Box CW 488, COLLEGE AND UNIVERSITY BUSINESS.

Business Manager — Accountant — Office Manager — For large wholesale school supply company; accounting and administration experience in other fields; BS Degree; resumé on request. Write to Box CW 508, COLLEGE AND UNIVERSITY BUSINESS.

Business Manager — Age 41, BS in BA; 12 years business experience; 2 years experience as assistant business manager in small midwest church college; experienced in all phases; desire west or southwest location; excellent references. Write to Box CW 507, COLLEGE AND UNIVERSITY BUSINESS.

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Grounds Superintendent — University graduate with major in horticulture; thoroughly experienced all phases landscape, greenhouse management, exotic plants, turf management,

labor relations, etc. Write to Box CW 502, COLLEGE AND UNIVERSITY BUSINESS.

Physical Plant, Construction or Business Management — Eleven years head of physical plant organizations to 700 employees, plant values over \$60 million; experienced in personnel, financial, procurement, transportation, housing, maintenance and construction management and contract administration; plus planning, engineering, utilities, power plant background; M.S. in Engineering, postgrad course in management, registered professional engineer; now employed can be available July; prefer southwest, west or south. Write Box CW 500, COLLEGE AND UNIVERSITY BUSINESS.

Staff Engineer — Fully qualified for director of plant position; graduate MIT, SB in Building Engineering and Construction; fourteen years experience with leading manufacturer, steam boiler power plant equipment and appliances; 7½ years experience with major middle east oil producer in home office and field; will consider any location; complete resumé available upon request. Write to Box CW 505, COLLEGE AND UNIVERSITY BUSINESS.

Superintendent of Buildings and Grounds — Regular Navy officer (Commander) contemplates voluntary retirement July, 1960; A.A. Engineering; B.S. University of Maryland; candidate for M.S., Villanova; experienced in plant operation, maintenance and upkeep; 4 years experience military research and development; 2 years as unit Engineering Officer; desire college/university affiliation above or related category any area; age 47; married; 3 children, excellent health. Write to Box CW 501, COLLEGE AND UNIVERSITY BUSINESS.

University Administrator — With 12 years experience and 14 years in private business desires position in larger institution; at present chief business officer in midwest institution; full resumé and credentials furnished on request. Write to Box CW 506, COLLEGE AND UNIVERSITY BUSINESS.

POSITIONS OPEN

Assistant to Business Officer — Approximately 25 years old; degree in Business Administration or experience; interested in a career in college business administration; excellent opportunity for advancement; private liberal arts college for men, approximately 800, in Northeast. Resumé and references to Box CO 336, COLLEGE AND UNIVERSITY BUSINESS.

Business Manager — Independent day and boarding school for 500 girls in large midwestern city seeks qualified man to supervise accounting procedures and plant maintenance;

new position in well-known, established school; state experience, salary requirement and availability. Write to Box CO, 344, COLLEGE AND UNIVERSITY BUSINESS.

Controller — Newly created position with Protestant church related liberal arts college of 900 enrollment in rural area city of 23,500 with good public school system; need man strong in accounting to prepare and supervise budget; experience in college business office; patience, maturity, ability to get along well with people. Send resumé with details of training and experience, photograph and references to Box CO 341, COLLEGE AND UNIVERSITY BUSINESS.

Dean of Administration — For midwestern municipal university having an enrollment of 7000 (2800 day and 4200 evening); successful experience of a high level required in all areas of college or university administration including such academic-related activities as industrial testing and institutional research, library, AF ROTC, athletics, and personnel, in addition to the usual business management activities; salary open. Send resumé of educational preparation and professional experience to Box CO 342, COLLEGE AND UNIVERSITY BUSINESS.

Director and Manager of Food Service — For a private liberal arts college in a metropolitan area in the middle west for the fall of 1960 or sooner; involves managing two dining halls and feeding about 600 students, planning meals, buying, and supervising help; send details about educational training and experience; also references. Write Box CO, 326, COLLEGE AND UNIVERSITY BUSINESS.

Director of Food Service — For private college in New York State for the summer or fall of 1960; involves managing cafeteria and snack bar operations, planning menus, buying, supervising help; send resumé about training and experience to Box CO 337, COLLEGE AND UNIVERSITY BUSINESS.

Food Service Manager — Medium-sized middle west institution has opening for food service manager for the fall of 1960 or sooner for a capable and personable male or female; this involves management of two relatively small food service units; excellent future opportunity; will consider current year's graduate or experienced personnel; salary open; if you qualify and enjoy campus environment, send complete personal data to Box CO 343, COLLEGE AND UNIVERSITY BUSINESS.

Food Service Director — Small middle Atlantic state college; small town; new building and equipment; now serving 400 students three meals daily; salary commensurate with training and experience; responsibility for entire operation; start work at once; retirement system, social security, holidays, and vacation. Write to Box CO 334, COLLEGE AND UNIVERSITY BUSINESS.

Food Service Director — Private liberal arts college in Michigan, starting July 1960; two dining halls and student center with large volume banquets and parties; new buildings and modern equipment; well trained staff; no labor problems. Send resumé and photo to Box CO 339, COLLEGE AND UNIVERSITY BUSINESS.

COLLEGE AND UNIVERSITY BUSINESS

919 N. Michigan Avenue, Chicago 11, Ill.

classified advertising

POSITIONS OPEN

Food Service Directors — Excellent opportunities are available for young men and women with food service experience; a leading food service caterer needs managers immediately for: colleges and schools; salary open; relocate. Send resumé to Box CO 285, COLLEGE AND UNIVERSITY BUSINESS.

Food Service Personnel — Immediate openings for managers, manager trainees, chef managers, chefs, young qualified male graduates who enjoy campus environment; best salaries, benefits; promotional opportunities in leading college food service organization; send personal data to SAGA FOOD SERVICE, 174 West College Street, Oberlin, Ohio.

Manager — For college bookstore; experience in all phases of textbook operation, merchandising, and general store management desired; excellent opportunity for qualified person; submit resumé of past experience, recent photograph, and salary; position available July 1, 1960. Write to Box CO 345, COLLEGE AND UNIVERSITY BUSINESS.

Supervisor of Construction — For midwestern college of 6500 enrollment; Civil Engineering Degree required, construction and/or architectural experience necessary; excellent advancement potential. Send complete resumé with first letter to Box CO 338, COLLEGE AND UNIVERSITY BUSINESS.

Superintendent of Buildings and Grounds — For a private liberal arts college in metropolitan area in middle west beginning summer, 1960; must have had some previous experience; send details about educational training and experience; also references. Write Box CO 325, COLLEGE AND UNIVERSITY BUSINESS.

Superintendent of Buildings and Grounds — For a fast-growing private liberal arts college in the middle west beginning as soon as possible; must have had some previous experience; send details about training and experience; salary open. Write to Box CO 340, COLLEGE AND UNIVERSITY BUSINESS.

Superintendent of Buildings and Grounds — For MILLS COLLEGE, Oakland, California, beginning June 1, 1960; administrative experience with technical knowledge of heating, electrical, construction and maintenance fields necessary; age 35 to 50; on-campus residence required; please send photo and resumé to Vice President and Treasurer.

FOR SALE

Opportunity for individual or group to obtain a beautiful campus with eight buildings which could be operated as private preparatory or junior college for young men or women; or military school; city evidences willingness to lease property for nominal rental; in fine residential community of 10,000, on main line of railroad; inquiries invited. Write to Box CS 3, COLLEGE AND UNIVERSITY BUSINESS.



for **EXHIBITS**

60 feet or 60 inches long...



CHOOSE MICHAELS CASES FOR GREATEST VALUE

Every Michaels skill and facility is available to every customer, whatever size and style of case he needs. Michaels custom-makes all types: wall, aisle, recessed, table, corner and suspended cases. To enhance contents and protect against vermin, theft, dirt and handling, Michaels offers mitered intersections, classic and modern design, exclusive interlocking frames, elimination of exposed screws from all but access panels.

Versatility and visibility also help make Michaels Time-Tight cases the choice of schools, colleges, universities, libraries, science laboratories and museums. Ask for free catalog illustrating the entire line.

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A Symbol of
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LANGUAGE IS SPEECH—WHY NOT TEACH IT THAT WAY

USE AN RCA LANGUAGE LABORATORY—Lessons that *talk* stimulate student interest and breathe new life into foreign languages. With an RCA Language Laboratory, each student receives tape-recorded lessons through a headset in his booth. Teachers and students alike benefit from this modern teaching technique: There's more time for teachers to work individually with students—and a *spoken* language, as well as a written one, is learned.

With this goal foremost in mind, RCA specialists in sound have teamed with educators to develop an extensive line of Language Laboratory equipment which meets every required teaching need. Versatile RCA systems allow a teacher to:

- (1) Use as many as 10 lesson tape recordings simultaneously;
- (2) hear both the master tape and student's voice;
- (3) talk with any student in a two-way conversation;
- (4) monitor each student selectively;
- (5) record student responses on central tape recorder;
- (6) insert comments during this recording.

For student recording, single and dual track tape decks and new cartridge tape recorders are available for use in individual booths.

ANOTHER WAY
RCA SERVES
EDUCATION
THROUGH
ELECTRONICS

You can readily plan an RCA Laboratory to suit your individual preferences . . . a Laboratory flexible enough for use from elementary grades through graduate work. It's also easy to re-arrange an RCA Language Laboratory to suit changing needs, or to expand it, *without obsoleting existing equipment.*

RCA offers a lower price tag than most, thanks mainly to the simplicity with which RCA engineers have designed the equipment. Transistorized construction of the RCA Laboratory means minimum wiring; thus installation costs are kept at rock-bottom. Low operating voltage guarantees safest use by students.

An Educational Lease-to-Own plan has been set up by RCA to make it easier for schools to purchase an RCA Language Laboratory.



Your RCA Language Laboratory dealer has full information and can help you plan the system which best meets your requirements and costs you least. For his name or descriptive literature, write: RCA, Language Laboratory Sales, Building 15-1, Camden 2, N.J.



Trmk(s) ®

RADIO CORPORATION of AMERICA

CAMDEN 2, NEW JERSEY



Hampden Folding Chairs can really take it!

EXTRA STURDY...FOR EXTRA YEARS OF SERVICE!

Whatever the burden, wherever the need, Hampden adult and juvenile public seating chairs give the best service! In quality, style, construction and value, Hampden chairs top the field in every price range.

Strength, comfort and style combine in Hampden chairs... they thrive on rugged use, and they're economical too! Largest seat and back in the industry... contoured for comfort. Won't tip... fold easily — and flat!

Enamel bonded on... rust resistant. So much extra value for so little money! WRITE for catalogue: Dept. C-5, HAMPDEN, Easthampton, Mass.

NO. 76



Tubular steel frame, wobble-free construction.

U-shaped cross bars can't twist or break.

Extra wide steel seat and back, comfort-contoured.

All metal edges completely beaded for extra strength and safety.

Chairs also available with tablet arm; steel, padded, wood or foam rubber seat.

Hampden

Manufacturers of:

PUBLIC SEATING • OUTDOOR and JUVENILE FURNITURE • BRIDGE SETS

WHAT'S NEW

TO HELP you get more information quickly on the new products described in this section, we have provided the postage paid card on page 101. Circle the key numbers on the card which correspond with the numbers at the close of each descriptive item in which you are interested. COLLEGE and UNIVERSITY BUSINESS will send your requests to the manufacturers. If you wish other product information, just write us and we shall make every effort to supply it.

Library Charging Desk in "Designer" Furniture

Flexibility is the feature of the charging desk in the new Remington Rand "Designer"



er" line of library furniture. Of metal and wood construction for strength with beauty, the desk is designed for roll-under equipment. Book trucks, Kardex units and other equipment can be placed under the desk for convenience in use. The unit is 36 inches wide and is available in heights of 39 or 30 inches. Shown in the illustration also is a 72-tray card cabinet with Safti-Pull and a new rod for easy operation. Remington Rand Div. of Sperry Rand Corp., 315 Fourth Ave., New York 10.

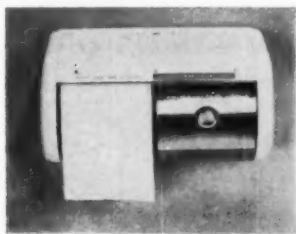
For more details circle #371 on mailing card.

Poli-Seal Floor Finish Seals and Polishes

Only one operation is required to seal and polish floors with the new finish known as Poli-Seal. It is designed for use on light terrazzo, white cement, magnesite, white marble, cork, wood, ceramic tile, quarry tile and slate floors and may also be used on many vinyls and linoleums. It provides a water-white finish that will not darken floors, is water-resistant and deters efflorescence of hard floors. Huntington Laboratories, Inc., Huntington, Ind.

For more details circle #372 on mailing card.

Twin Dispenser for Marathon Tissue



Made of durable, heavy-gauge metal, the new Marathon Twin-Tissue Dispenser holds two rolls of toilet tissue. When one compartment is empty, the user slides the stainless steel door which automatically locks into position exposing a new roll of

tissue ready for use. The modern contours facilitate cleaning, the dispenser is theft-proof, and waste is discouraged. Marathon, Div. of American Can Co., Menasha, Wis.

For more details circle #373 on mailing card.

Two Soups Added to Campbell Line

Available in both individual and quantity preparation sizes, two new soups are introduced by Campbell. Old-Fashioned Tomato Rice and Cream of Vegetable bring to 18 the number of soups in the ready-to-serve line for institutional use. They may be used with the Campbell counter kitchen, in coin or manually-operated dispensing equipment and for regular service. Campbell Soup Co., 375 Memorial Ave., Camden, N.J.

For more details circle #374 on mailing card.

Starter Kit for Overhead Projection



Users of Vu-Graph Overhead Projectors now have available the new Beseler Starter Kit to assist in preparation of materials for teaching and demonstration. A complete selection of tools and materials for quick illustration of important points is contained in the new kit for preparation of material in front of the class or in advance. Illustrations can be in black and white or in color and material can be traced, drawn, lettered or typed. Charles Beseler Co., 219 S. 18th St., East Orange, N.J.

For more details circle #375 on mailing card.

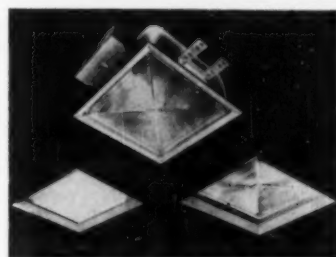
Classic Drinking Fountain Features Modern Design

Heavy vitreous china facilitates maintenance in the new Classic recessed drinking fountain designed for use in modern interiors. Features include a push-button glass filler faucet through the back, a brass strainer, self-closing lever handle stop and positive shut-off service valve. All exposed fittings are chromium plated. Universal-Run-der Corp., New Castle, Pa.

For more details circle #376 on mailing card.

Two Basic Boxes in Uni-Frame Line

Two basic boxes are now available, with the introduction of a new line of recessed



incandescent lens boxes called Uni-Frame. The boxes can be fitted with either lens or glass bowl, frames and splays to make a total of 24 basic appearance combinations. The new 10-inch Uni-Frame accommodates 100-150-watt lamps while the 12-inch accommodates 200-300-watt lamps. High efficiency lighting is provided by a one-piece Alzak aluminum reflector. Outer frames and optional splay trims come in baked white enamel on steel, satin aluminum or satin brass finish. Day-Brite Lighting, Inc., 6260 N. Broadway, St. Louis 15, Mo.

For more details circle #377 on mailing card.

Data Processing System Is Transistorized

The new IBM 1401 Data Processing System is all-transistorized equipment for high-powered data processing at greatly reduced cost. Features of the new system include high speed card punching and reading, magnetic tape input and output, high speed printing, stored program and arithmetic and logical ability. The 1401 may be operated as an independent system, in conjunction with IBM punched card equipment, or as auxiliary equipment to IBM 700 or 7000 series systems. It performs functions previously requiring a number of separate machines and the sim-



plified programming technics make it powerful and efficient. International Business Machines, Data Processing Div., 112 East Post Rd., White Plains, N. Y.

For more details circle #378 on mailing card.

(Continued on page 82)

Dormitory Furniture in Space-Saving Design

Designed to form space-saving multiple arrangements and reduce installation and maintenance costs, Encore metal furniture



for dormitories is designed for permanent built-in use. The line is sturdily constructed of top quality furniture steel with baked-on chip-resistant enamel finish in a choice of colors. Formica facings are available if desired. Units include a vanity with light, mirror, sink and fixtures; individual wardrobe as a combination unit if desired; matching five-drawer chest; desk, and divan which converts into a bed. Reliance Engineering & Mfg. Co., P.O. Box 1229, San Antonio 11, Texas.

For more details circle #379 on mailing card.

RCA Electronic System for Multi-Language Instruction

As many as ten foreign languages may be taught in the same classroom with the new RCA electronic system. A control console added to the RCA Language Laboratory system enables a teacher to tune in an individual student in his sound booth, monitor his work and offer advice without disturbing other members of the class. The new console has a key unit consisting of a transistorized amplifier only three by eight inches in size which permits selection of up to ten language channels. The system can be adapted to virtually any institution of learning, from grade school to university. Radio Corporation of America, Camden 2, N.J.

For more details circle #380 on mailing card.

Three-Way Adjustable Chair for Typing Comfort and Posture

Engineered for individual fit, perfect comfort and correct typing posture, the Typists Posture Chair No. 47 is a new addition to the Desks of America line of school furniture. The chair is three-way adjust-



able with contour-shaped seat and back of plastic, available in a choice of colors. Exceptionally sturdy construction eliminates maintenance problems and assures long use. Desks of America, Inc., P.O. Box 6185, Bridgeport 6, Conn.

For more details circle #381 on mailing card.

Glass Laboratory Ware Strengthened for Student Use

Pyrex glass is used in the new economy line of strengthened glass laboratory ware designed specifically for student use. The items are mechanically strong and resistant to heat, heat shock and chemical attack. Included in the line are a volumetric pipette with large tip opening, a straight bore stopcock burette with permanent Accu-red graduations, a thistle tube funnel with flat-



sided top to prevent rolling, and labeled and plain reagent bottles. Corning Glass Works, Corning, N.Y.

For more details circle #382 on mailing card.

Adjustable Leg Extension for Lyon Steel Stools

Existing models of Lyon steel stools can be converted for leg adjustment with the new adjustable leg extension recently introduced along with twenty new models of steel stools. The new models have adjustable feet, permitting increase of stool height in one-inch increments up to three inches. Stools are available with or without adjustable back rest, with plain steel or pressed wood over steel seats. Lyon Metal Products, Inc., Aurora, Ill.

For more details circle #383 on mailing card.

Increased Wet Capacity with Squee-zee 30

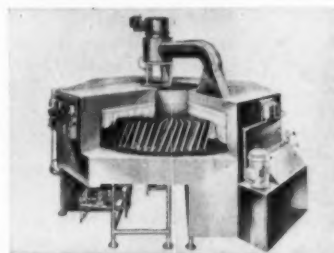


Made to be used with Models BP-2 and RS-1 Super Suction cleaners, the new Squee-zee 30 attachment increases the wet pick-up capacity to the maximum. The attachment consists of a 30-inch curved neoprene rubber blade mounted in a metal frame, a suction chamber, heavy duty hose, adjustable handle and plates for attaching to the transport handle of the cleaner. It is attached without the use of tools. The Squee-zee is flexible and readily follows the contour of any floor. The National Super Service Co., 1945 N. 12th St., Toledo 2, Ohio.

For more details circle #384 on mailing card.

Turntable Model 1340 Cleans Pans

Developed for use in washing and sanitizing pans and shelf racks, the new A-F Turntable Model 1340 provides high effi-



ciency with one man operation in a small area. A high pressure wash at an elevated temperature is the heart of all A-F Pan Washer systems and a recirculating and fresh water rinse with an effective hot air dryer complete the process of cleaning and sanitizing pots and pans. The Alvey-Ferguson Co., 5912 Disney St., Cincinnati 9, Ohio.

For more details circle #385 on mailing card.

Johnson's Shine-Up Spray Cleans and Waxes

Woodwork, walls, fixtures, metal and wood furniture and other materials can be quickly and easily cleaned and waxed with the new Johnson's Shine-up Spray. Supplied in an institutional sized spray dispenser, Shine-up cleans as it waxes, speeding the work of dusting and preventing dust from being released into the air. S. C. Johnson & Son, Inc., Racine, Wis.

For more details circle #386 on mailing card.

Space-Maker Telephone Has Movable Dial and Hookswitch

A dial mounting that can be rotated a full 360 degrees, tilted backward 45 degrees and locked into place at any point, plus a handset cradle that swings in a 180 degree arc and locks into any one of seven different positions, make the new Space-Maker Telephone a versatile instrument for installation in many areas. Developed by General Telephone Laboratories, the new telephone has a clear plastic shield inside the base that ensures that wires and springs of the movable hookswitch will not become tangled when the installer changes the position of the cradle. A variety of



mounting and wiring holes in the base permits easy mounting on desk, wall or any flat surface. Automatic Electric, Sub. of General Telephone & Electronics, Wolf Rd. & North Ave., Northlake, Ill.

For more details circle #387 on mailing card.

(Continued on page 84)

SAVE SPACE...cut furnishing expense with MENGEL built-in CLOSET WALLS



- More usable space per square foot of closet space.
- Equipped with clothes rods, adjustable shelves, drawers, and divider partitions, as desired.

- Cost less than conventional plaster or dry wall closets.
- Warp-free doors with steel channels on vertical edges and four point suspension. Also equipped with exclusive adjustable hangers.

Mengel modular closet wall units are designed to provide more usable closet and living space for rooms in new or existing dorms.

Basic closet units may be combined with Mengel built-in chests, desks, and vanities to form a functional closet wall. By using Mengel closets in multiple, you can eliminate ordinary wall construction of non-load-bearing inside walls.

Mengel closet walls and accessories are shipped knocked down in individual cartons for quick, easy and inexpensive assembly. They are available in widths of 2', 3', 4', 5', and 6' and are 91½ inches high for simple tilt-up installation. Frames are of hardwood with Gum, Birch, or Oak plywood exteriors. All units are fine sanded ready for finishing. Inquire about factory pre-finishing.

FREE BROCHURE . . . MAIL THIS COUPON NOW!



Space Saver
MENGEL....
Closet Walls

The Mengel Company
814 West 25th Street, Winston-Salem, N. C.

Gentlemen: Please rush full details about Mengel Closet Walls.

Name

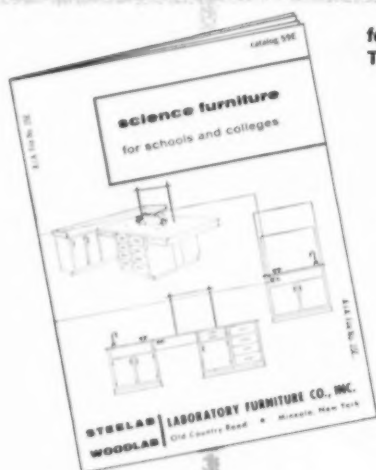
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NEW science furniture catalog and planning manual



for use by School Administrators, Science Teachers, Architects and Engineers

The most complete line of science furniture available from a single source—instructors' tables, student tables, auxiliary furniture, fume hoods, storage cabinets, top materials and service fixtures.

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Write today for catalog 59E-C

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finest in wood

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Q.

DOES A STUDENT USE HIS TIME BETTER IN A BEDROOM OR IN A LIVING-STUDY ROOM?

A.

IN A LIVING-STUDY ROOM, NATURALLY!

The Wall-Away Plan provides a complete dormitory living-study room that adroitly disguises the function of bedroom. Students respond to these more pleasant surroundings, are happier, better adjusted, better students.

Yet, the Wall-Away Plan costs no more than the typical drab, unimaginative, space-wasting dormitory room furnishings. Wall-Away provides a complete integrated service — layouts, estimates engineering, manufacture, installation.

Send for FREE DATA and names of users.

Wall-Away Corporation

Campus Street,

Wabash, Indiana



Continuous Line Grille Has Adjustable Core

Model STWA is a new Continuous Line Diffusing Grille in the Uni-Flo line of air distribution products. It can be mounted



in ceiling, floor, sill or side wall by a simplified spring clip fastener for easy installation. The new grille has an adjustable core for adjustment of the air patterns through a tamperproof setting of the fins. The vertical air pattern can be altered up or down by inverting the grille, which features a sturdy flat aluminum flange. Barber-Colman Co., 1300 Rock St., Rockford, Ill.

For more details circle #388 on mailing card.

Coins Automatically Fed Into Counters for Fast Sorting and Counting

Coins are automatically fed into the hoppers of counting and sorting machines at the proper rate of speed by the Klopophopper. The new unit has a self-adjusting switch control which regulates the flow of coins and is adaptable for use with most makes of counters and sorters. It has a ca-

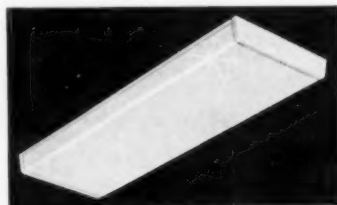


capacity of 10,000 to 12,000 coins and a maximum delivery of 6,000 coins per minute, is 20 inches high and 18 inches wide, with a polished aluminum and gray enamel finish. It plugs into a standard electrical outlet. Kloop Engineering, Inc., 35551 Schoolcraft, Livonia, Mich.

For more details circle #389 on mailing card.

"Prismatic-100" is Economy Lamp Unit

Applicable almost anywhere, singly or or in rows, the "Prismatic-100" is a new four-foot, four 40-W-RS lamp economy unit. Designed as a companion to the two-lamp "Prismatic-50," the new unit has



clear panoramic plastic lens, white enameled steel parts, and is recommended for use with white ceilings and light walls for maximum efficiency. The Wakefield Co., Vermilion, Ohio.

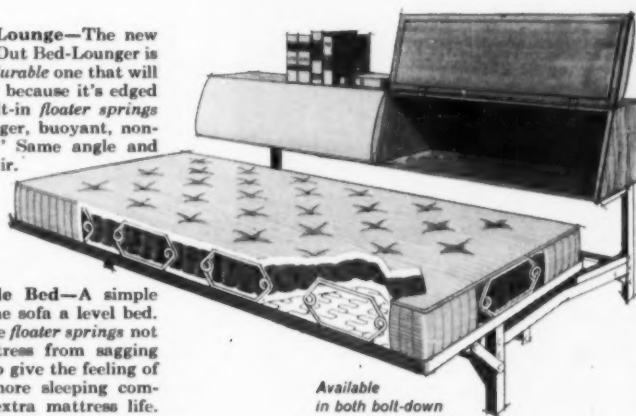
For more details circle #390 on mailing card.

(Continued on page 86)



this multi-purpose bed lounger saves money... saves space

It's A Luxurious Lounge—The new Southern Cross Pull-Out Bed-Lounger is a sofa by day, and a *durable* one that will stand lots of sitting, because it's edged all around with built-in *floaters* springs that provide a stronger, buoyant, non-sagging "seat edge." Same angle and pitch as an easy chair.



It's A Comfortable Bed—A simple conversion makes the sofa a level bed. And the edge-to-edge *floaters* springs not only keep the mattress from sagging at the edges, but also give the feeling of greater roominess, more sleeping comfort, plus years of extra mattress life. Regular or extra length.

Available
in both bolt-down
and movable models

It's A Storage Chest—Provides plenty of space to store pillows, blankets. Can be had with single or double storage cabinets, doors hinged top or bottom. Bolster back cushioned in foam rubber, covered in heavy-duty synthetic leather for longer wear.

It's A Book Shelf—The new Pull-Out Bed-Lounger has a shelf-top, and can be had with book-end attachments. And since the shelf extends the entire length of the Bed-Lounger, it makes a roomy holder of all sorts of things, and eliminates that "cluttered room" look.

Write for complete descriptive folder

Available on contract to members of the
Educational and Institutional Cooperative Service, Inc.
1461 Franklin Ave., Garden City, L.I., New York

SOUTHERN CROSS

Dormitory Sleep Products, Contract Division, Southern Spring Bed Company, 290 Hunter Street, S.E., Atlanta 1, Georgia. MURRAY 8-2154 *Patent applied for



Large Heavy Duty Griddle in Toastmaster Thunderbolt Line



The Thunderbolt "850" Model 7D1 Griddle has an 864-square inch cooking surface with maximum power for speedy

cooking. Four independently controlled temperature dials permit the use of varying temperatures on four areas of the griddle to accommodate different foods. The stainless steel unit, for counter-top installation, requires no banking strips and is built for use with other Thunderbolt equipment for complete food service. **Toastmaster Div., McGraw-Edison Co., Elgin, Ill.**

For more details circle #391 on mailing card.

Sturdy Filing Stool Added to Krueger Line

Heavy gauge, electrically seam-welded tubular steel legs, cross-braced with a securely welded tubular steel ring, give strength and rigidity to the new 14-inch high Krueger Low-Boy Filing Stool. Other

features include a die-formed fully curled bottom safety edge on the seat and extra large roller bearing caster wheels for gliding mobility. **Krueger Metal Products Co., Green Bay, Wis.**

For more details circle #392 on mailing card.

Milk Dispensers and Storage Stands Available in Various Sizes

An adjustable temperature control with temperature indicator in the door is featured on the N-15 Manhattan Milk Dispenser which holds three five-gallon cans, each with separate dispensing valve, and serves 240 eight-ounce glasses of milk. Two



smaller sizes, one holding two five-gallon cans and the other holding one five-gallon can, are also available. The stainless steel N-15 Refrigerated Storage Stand holds three reserve five-gallon cans and has automatically controlled temperature. Dispensers and stands are sold separately. **Norris Dispensers, Inc., 2720 Lyndale Ave., S., Minneapolis 8, Minn.**

For more details circle #393 on mailing card.

Folding Table Has Telescoping Legs

A telescoping leg arrangement on the new adjustable height Foldcraft Folding Table adjusts from 21 to 31 inches in height. The mechanism is spring-operated, with fingertip control and a positive locking device on each leg for rigidity. The tops are available in unfinished plywood, Waytex hardboard with a honeycomb core, or Pionite plastic laminated to a plywood core. **Foldcraft Corp., Mendota, Minn.**

For more details circle #394 on mailing card.

Steel Locker Basket Has Louver Ventilation

The new Korwin Locker Basket of 20-gauge steel construction, has six-way per-



forated and louvered ventilation to keep clothes fresh. There are no sharp edges to damage clothing or injure students and the basket, designed for gymnasiums and athletic department use, is practically indestructible. It is finished in gray, green or tan baked enamel that does not chip or peel, and each unit has an eye for padlock attachment. **Korwin Co., 1196 Stout St., Denver 4, Colo.**

For more details circle #395 on mailing card.

(Continued on page 88)

ADVANCED DEGREE IN LECTURE ROOM EFFICIENCY!



From a complete line of furnishings... college office to college classroom! The new 600 Chair Desk for example, boasts a maximum work area with proper elbow support... Fibre-plastic work surface for easy maintenance. Available with Fibre-glass back and seat! Metal Colors: Mint Green, Sea Blue, Coppertone, Mist Gray. Write for free full color Quadraline catalog.

American Desk

MANUFACTURING CO. • Temple, Texas





TORO

Park Special*

makes molehills out of mountains!

Talk about a hill climber—you're talking about the mower you see right here. It can climb up any hill you can walk up—and that's just one of its talents.

Trimming close is another specialty. Easy handling and maneuverable, too.

And it turns mountainous maintenance costs into molehills. Compare it with any other mower of its size and type, and you'll see.

This is the Toro Park Special: 30 inches of rugged 8-inch diameter reel with 6 blades double-riveted to malleable spiders . . . a 5¼ hp engine . . . ground-hugging 3.00 x 7 pneumatic tires with large caster-wheels in front . . . individual traction and reel clutches with full differential on traction wheels—and optional equipment that includes reverse, electric starting, riding sulky, and grass catcher.

See the Park Special at your nearby Toro distributor's. He's listed in the Yellow Pages under "Lawn Mowers."

*A registered trademark of Toro Mfg. Corp.

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TORO MANUFACTURING CORPORATION
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LANGUAGE LABORATORIES

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Contact your
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complete catalog.

Whatever your requirements, a separate room or a modernized classroom, Rheem Califone can meet your specifications, with dependable, rugged language laboratory equipment.

Recorders, playbacks, phonographs, consoles, booths, etc.—all manufactured by Rheem Califone—offer to the field of language education integrated equipment that is the most reliable, easiest to service and simplest to operate.



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AJUSTER CHAIRS AND STOOLS



- Proper classroom posture
- No soiled hands when adjusting seat
- Child can adjust seat—it's so simple

AJUSTER TYPING CHAIRS

Model TSC-1520 Typing Chair and Model 2228 Table
Adjust the chair, not the table, and save on your original investment. Saddle shaped hardwood seat adjusts from 16" to 21". Form fitting backrest (metal or plywood) has vertical and horizontal adjustments of 5".

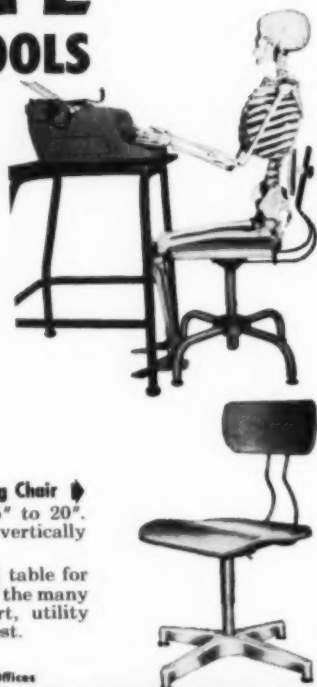
Model CPC-1520 Typing Chair

Form fitting plywood seat adjusts from 15" to 20".
Form fitting plywood backrest adjusts 5" vertically and horizontally.

FREE TRIAL Use an AJUSTER chair and table for 30 days without obligation. Prove to yourself the many advantages AJUSTER offers in comfort, utility and economy. Write today—we'll do the rest.

10 YEAR GUARANTEE

32 Models for Factories • Schools • Laboratories • Hospitals • Offices



AJUSTO EQUIPMENT CO.
515 CONNEAUT ST. BOWLING GREEN, OHIO

Water Purification Cartridges in Interchangeable System

Selective water purification is readily achieved through the new Barnstead purification cartridges which may be used interchangeably with Bantam Demineralizers. The new cartridges may be used for



standard demineralization of water by ion-exchange, ultra-high purification, removal of organic matter, removal of oxygen and as a cation cartridge for recovery of precious metals. **Barnstead Still & Sterilizer Co., 194 Lanesville Terr., Boston 31, Mass.**
For more details circle #396 on mailing card.

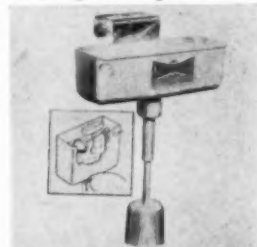
Speedomatic Lighting Troffers Are Extra-Shallow

Fast installation and shallow area are features of the new Speedomatic lighting troffers. Recessing less than five inches, the troffers are available in four basic types to fit all modern ceilings. An exclusive telescopic door frame automatically adjusts the Speedomatic to assure perfect fitting, even in irregular ceiling openings. A single width of metal frames the installed shielding, offering maximum illuminated area. The doors open without mechanical catches and the wiring access door provides ample room to reach cables. **Smithcraft Corp., Chelsea 50, Mass.**

For more details circle #397 on mailing card.

Toilet Bowls Kept Clean and Odorless With Kleen-Flush Dispenser

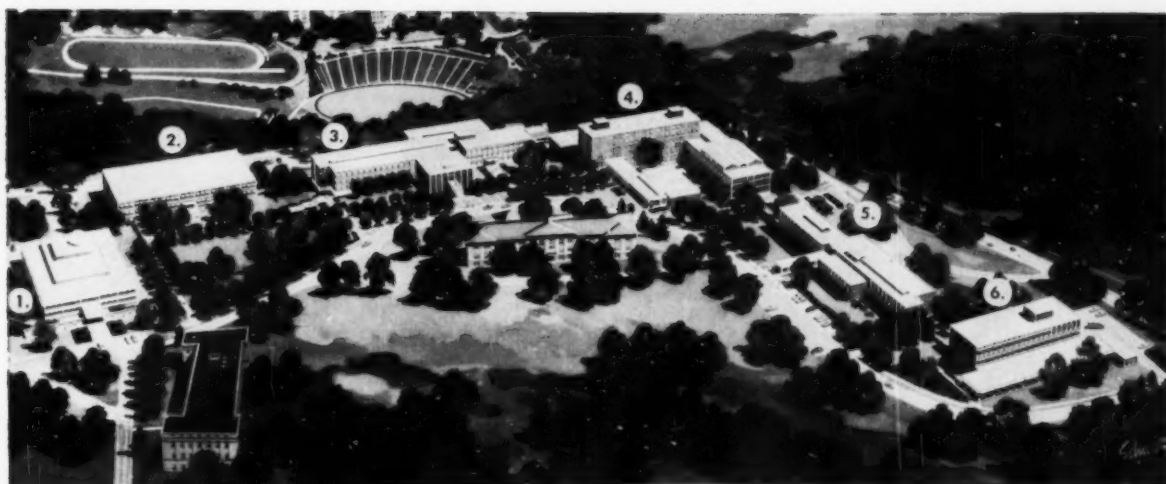
An entirely new type of chemical that cleans, deodorizes and softens water going through the new Kleen-Flush Dispenser is now available for use in toilet tanks. The chemical action prevents rusting or corrosion of moving metal parts in the tank,



keeps all outlets in the toilet open and free-flowing, dissolves grease and waste matter, and keeps toilets clean with a minimum of cost and labor. The new dispenser holds eight ounces of Kleen-Flush Concentrate and works automatically with every flushing of the toilet. **James Varley & Sons, Inc., 1200 Switzer Ave., St. Louis 15, Mo.**

For more details circle #398 on mailing card.

(Continued on page 90)



Architects for the six new Science Center Buildings, University of Georgia; Abreu and Robeson, Aeck & Associates, and Toombs Amisano & Wells, Atlanta, Ga. General Contractors: Daniels Construction Co., Greenville, S. C. and Birmingham, Ala. H. W. Ivey Construction Co., Atlanta, Ga. Typical interiors of the Physics Building are shown at the left.

LEGEND

1. Physics Building
2. Mathematics, Geography and Geology Building
3. Chemistry Building
4. Biological Sciences Building
5. Animal Sciences Building
6. Food Technology Building

NEW UNIVERSITY OF GEORGIA SCIENCE CENTER is being completely equipped with KEWAUNEE-TECHNICAL LABORATORY FURNITURE AND EQUIPMENT



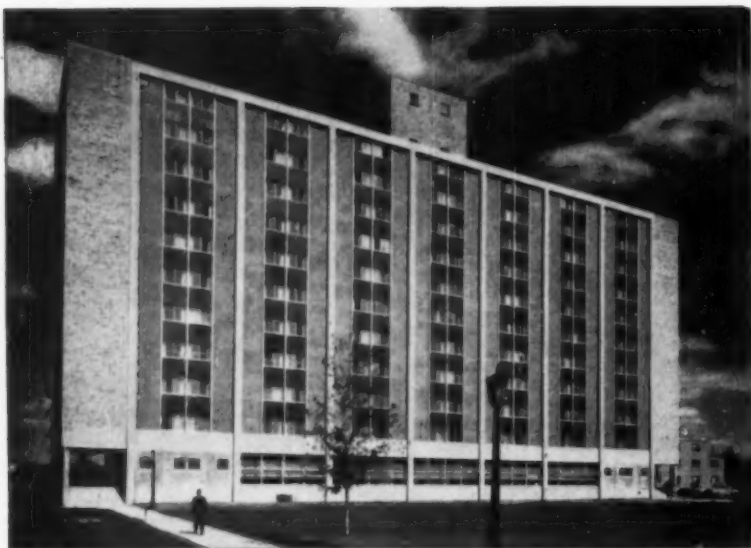
Working in the closest cooperation with the three Atlanta architectural firms and University officials, it was possible to plan for several economies resulting in impressive savings. This coordinated approach to integral building of science facilities well typifies the State of Georgia's forward approach to better education and modern living to better serve business and industry.

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(#58) on Wood Laboratory Equipment.

KEMTECH

KEWAUNEE TECHNICAL FURNITURE CO.
3007 WEST FRONT ST., STATESVILLE, N. C.

AFFILIATE OF KEWAUNEE MFG. CO., ADRIAN, MICHIGAN



Architect: James, Meadows and Howard, Buffalo, N. Y.

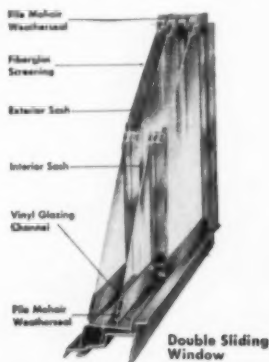
Modern Fleetlite Sliding Windows Chosen for Tower Dormitory on the University of Buffalo Campus

Rising eleven floors above the University of Buffalo campus is the new Tower Dormitory... a masterpiece in concrete, brick and colorful terra cotta with row upon row of Fleetlite Aluminum Double Windows.

In planning this campus home for over 400 student residents, University authorities selected Fleetlite double windows for reasons of both comfort and economy. By a simple adjustment of the interior and exterior sliding sash, students may enjoy indirect ventilation regardless of the weather. No stuffy rooms, no drafts, no possibility that rain or snow will damage furnishings.

Fleetlite double windows also mean double economy. A "blanket of air" insulation between the sash

results in more efficient heating and subsequent fuel savings. At the same time, there is economy in maintenance. Durable aluminum requires no painting; vinyl plastic replaces putty; and, since all sash may be removed from the inside for cleaning, costly and dangerous outside window washing is eliminated.



Double Sliding Window

Fleetlite
AMERICA'S "Zestful" WINDOW
Aluminum Windows
Sliding Glass Doors
Jalousie Windows and Doors

FLEET OF AMERICA, INC.

Dept. CU-20, 2015 Walden Avenue
Buffalo 23, New York

Please send complete Fleetlite window information.

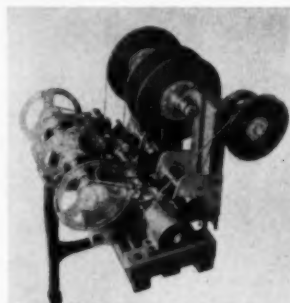
Name _____

Address _____

City _____ State _____

Educational Tapes Quickly Duplicated

A professional quality tape duplicator at budget price is available in the Model 10 MRI. Specifically designed for educational use, it incorporates the newest electronic designs to produce perfect copies of teaching tapes. The standard unit can be easily loaded with up to 3600 feet of tape at one time and any REATMA standard reels can



be used on the take-up side. Teaching tapes can thus be easily duplicated so that each pupil in a language laboratory, for instance, can have his own tape of the teaching material. **Magnetic Recording Industries, 126 Fifth Ave., New York 11.**

For more details circle #399 on mailing card.

"50" Series Door Closers Are Moderately Priced

The new Yale "50" series full rack and pinion door closers are moderately priced, yet have many of the features of the heavier series. Modern styling, horizontal silhouette and full rack and pinion mechanism, with two-speed closing control and self-lubricating bearings, make the new closers efficient in institutional installations. All models in the new "50" series are available in brown lacquer and silver bronze finishes. **The Yale & Towne Mfg. Co., 11 S. Broadway, White Plains, N.Y.**

For more details circle #400 on mailing card.

Classroom Light Level Controlled by Luxtrol System

The Luxtrol Automatic Light Controller adjusts artificial light in the classroom to



assure a constant light level. The desired amount of room light is pre-set on the Lumistat. Through a photo-electric scanner, mounted where it can best monitor the lighted area to measure the amount of combined daylight and artificial light in the room, electric light is dimmed or brightened to maintain the desired level. **Superior Electric Co., 83 Laurel St., Bristol, Conn.**

For more details circle #401 on mailing card.

(Continued on page 92)

21 Years of Continuing Service
To The Field of Education

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SPECIALISTS IN TUITION PAYMENT PROGRAMS

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THE TUITION PLAN, INC.
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Wall-Saving Side Chair
(NO. 8232 matching
arm chair.)

Wide assortment of chairs and tables. See your dealer
or write us for our distributor's name.

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Permanent Displays: Chicago • New York • Miami • Boston • San Francisco

Multi-purpose use of space..

WITH HOWE FOLDING TABLES



Budget-priced! HowLite plastic top folding tables are priced below tables with plastic laminate tops. HowLite is unharmed by soaps, water, bleaches, greases. The resilient vinyl content of HowLite plastic subdues silverware clatter, protects china from breakage. "Golden Birch" pattern can't wear away. For data, use coupon below.



Eases handling and storing. Howe folding chair and table trucks have welded steel frames of 2" x 2" x 1/8" thick angle iron. 6' and 8' long HOWE table trucks carry 10-12 units. HOWE chair trucks come in 5, 6, 7, 8 ft. lengths. Available in upright and understage storage models. Howe's round banquet table trucks handle 48"-72" dia. tables. All HOWE trucks roll easily on 4", hard rubber, ball bearing casters. For information, use coupon below.



12 ft. folding conference table. The HOWE Mobil-Matic "12" seats 14 people comfortably, folds easily and compactly, rolls away on 4" swivel casters. Counterbalanced spring tension and synchronized action make opening and folding almost effortless. Genuine walnut-grained Formica top. Self-edged or anodized aluminum molding. Understructure plated with bright, rustproof, Cadmium. Get literature on HOWE mobile units. Use coupon below.

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170 HOWE units...
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erature, act now!

HOWE FOLDING FURNITURE, INC.
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Please send me illustrated literature describing the
following: HOWE Chair and Table Trucks ☐

HOWE Mobil-matic Units ☐ HowLite Plastic Top ☐

Name _____

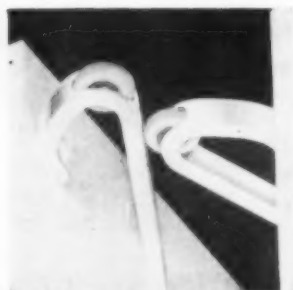
Title _____

Institution _____

Address _____

City _____

Zone _____ State _____



Easily-Installed Rollmates Protect Open Doors

Doors that open back to back can be prevented from bumping with a new de-

vice recently introduced, known as Rollmates. Easily installed with a screw driver, Rollmates prevent knobs from interlocking, prevent marring of finish and eliminate noise. They are made of sturdy aluminum in satin or brass finish. **Sargent & Greenleaf, Inc., 24 Seneca St., Rochester 21, N.Y.**

For more details circle #402 on mailing card.

Photocopy Halftone Paper Permits Copies of Photographs

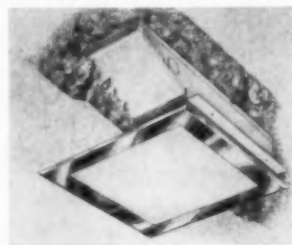
A new type of photocopy material called PH (Photocopy Halftone) paper is now available for use with Nord Photocopy Machines for copying any type of photograph, whether in black and white or color. Quick, inexpensive copies are quickly made which

can be ferrotyped to give high, glossy, professional finishes. PH papers can also be used to make acceptable halftone originals for use on electronic stencil cutting machines and a special film is available to make masters for blue-print and diazo machines. **Nord Photocopy & Business Equipment Corp., 300 Denton Ave., New Hyde Park, L.I., N.Y.**

For more details circle #403 on mailing card.

Recessed Lighting Fixtures For Concrete Pour Construction

A new series of shallow, recessed lighting fixtures designed for use in concrete pour



construction is now available. A removable top on the housing allows prewiring and a large access plate inside the housing permits wiring after the concrete has been poured. The series is available with Relamp-A-Lite or Preslok frames designed to permit easy access for maintenance. Units are made of 16-gauge steel, specially processed for rust inhibition and finished in white baked enamel. They are available with round or square glass and lens. **Prescolite Mfg. Co., 2229 Fourth St., Berkeley, Calif.**

For more details circle #404 on mailing card.



Maine Township High School, serving the Chicago suburb of Park Ridge, Illinois.



Here is the Conn Organ that won the tone contest at Maine Township High School.

Only Conn Passed the "Listening Test" At Maine Township High School!

When a school needs an organ for their auditorium, how do they go about choosing the *right* one? Here's what an active music parents group did at Maine Township High School, which serves the Chicago suburb of Park Ridge.

After raising the necessary funds, this enterprising group decided to hold a "Listening Test" to determine which make of organ would best serve their needs.

A Conn Organ was chosen to compete with three other makes of organs in a side-by-side comparison test. When all the votes were in and

tallied, the results showed Conn Organ to be superior. That's why Maine Township High School decided on a Conn for their extensive musical program.

There is a Conn Organ to meet every requirement. If you are considering the purchase of an organ for your school, talk to your Conn Organ dealer about it. He will be glad to discuss your particular requirements. And he can arrange monthly payments that are surprisingly low.

If you prefer to write for more information, here is our address: **Conn Organ Corp., Elkhart, Indiana.**

Portable Basketball Goals For Indoor or Outdoor Play

Developed by a public school athletic director, the Gibson Portable Basketball Goals are designed for mass participation of students in athletics. The new Match Play Porta-Goal has a backboard offset four



feet from the cast iron base for safe play. The weight distribution in the base prevents tipping and it employs the latest official Wilson backboard assembly. The horizontal arm telescopes and the unit can be completely dismantled for storage. The large built-in rubber tires permit easy moving for use indoors or out and the unit is available with arm and backboard on both sides for maximum use. **Gibson Porta-Goal, 370 Grand Ave., Oakland 10, Calif.**

For more details circle #405 on mailing card.

(Continued on page 94)

There is a noticeable difference in a **CONN ORGAN**

6-IN-ONE

"BIG SIX" NEWS FOR INSTITUTIONS

GENERAL CHEF combines six kitchen-essentials in one compact, efficient unit:

**REFRIGERATOR • OVEN • SINK
STOVE • FREEZER • STORAGE**

Every model available in white or several wood-grain finishes. Entire base unit factory-assembled and shipped in one crate. Available on all units: garbage disposal; one-piece stainless steel tops. And don't forget: GENERAL CHEF is the only Complete Kitchen Unit with factory-owned, nation-wide sales and service.



For complete details write:
General Air Conditioning Corp.
Dept. G-20, 4542 E. Dunham St.
Los Angeles 23, California

GENERAL CHEF
World's largest-selling
COMPLETE KITCHEN UNIT



Soundguard

*... new folding partition separates
both space and sound effectively*

You can now assure quietness in classrooms—contain cafeteria noises—divide lab and auditorium areas effectively . . . with SOUNDGUARD. Soundguard is the folding door that offers maximum sound reduction. This is due not only to Soundguard's denser sound insulation within the partition itself, but also to the complete perimeter sealing—the tight seal that blocks sound from passing around jambs and operating edges. An outstanding Soundguard feature!

Soundguard has a rugged steel frame covered with beautiful vinyl fabric which withstands abuse—assures long, active life and easy maintenance.

Other FOLDOOR models include narrow profile doors for wardrobe applications. There's a FOLDOOR door or partition for every school use.



FiliGrille

... new and different, functional and decorative. A 3/4" thick styrene grillework in standard designs, factory fabricated in customized panels. Ideal as space dividers and screens. FiliGrille is offered in a variety of complete framing systems adaptable to any school application.

Holcomb & Hoke Mfg. Co., Inc. Dept. A1211
1545 Van Buren Street, Indianapolis 7, Indiana

Please send complete information on:

☐ FOLDOOR Soundguard ☐ FiliGrille grillework

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**Library Featuring
DENSIWOOD®
Scuff-Proof Bases!**

Famous Lundstrom sectionals — the bookcase that grows with your library — are sold direct from the factory . . . at savings to you of 38% or more! Handsome, classic styling and quality construction assure life-long satisfaction . . . Glass doors glide completely back and out of the way. Special interlock feature enables sections to fit together almost invisibly. Exclusive DENSIWOOD box base fronts and ends shrug off scuffs and scratches. All styles open stock, matching sections always available. Write today for simplified Order Form and Catalog U-20.

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Color studies
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11 Madison Avenue
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Specially Designed "Magic Lids"
Convert Drums to Waste Receptacles

Bolting, screwing or other adapter devices are eliminated with the use of "Magic Lids" designed to convert 16-gallon drums



into waste receptacles. The lid is automatically locked over the drum rim when the long arc-shaped handle, which ensures proper balance for lifting and carrying, is raised. A center hole simplifies waste disposal. **United Metal Cabinet Corp., 8 E. 36th St., New York 16.**

For more details circle #406 on mailing card.

Air Conditioning "Circus"
Visualizes Operation

Year-round air conditioning units actually in operation in room settings are set up in the Warren Webster Mobile Demonstrators available for presentation at school, hospital, college or other institu-



tion. The display trucks are designed to show quickly the simplicity of use and ease of installation of air conditioning units and are accompanied by company engineers to answer questions and discuss applications. **Warren Webster & Co., Inc., 17th & Federal Sts., Camden 5, N. J.**

For more details circle #407 on mailing card.

Top-Railer Door Closer
Simplifies Installation

Designed specifically to simplify installation, servicing and adjustment, the new 500 Series Top-Railer Door Closer is inconspicuous and compact. It can be mounted on metal or wood doors and is



available with either mortise or surface jamb brackets, both hold-open and non-hold-open. Adjustable and non-adjustable arms, sizes No. 9 and No. 11, may be used with the Top-Railer. **American Hardware Corp., Russell & Erwin Div., New Britain, Conn.**

For more details circle #408 on mailing card.

Lamps*

**CUSTOM DESIGNED AND
BUILT SPECIFICALLY FOR
COLLEGE RESIDENCE HALLS**



All Completely
U. L. Approved

*Both Portable and as Fixtures

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MFG. CORP., Muncie, Indiana

Direct-Wire TV System
for Low-Cost Educational Use

The heart of the new direct-wire television system introduced by Argus Cameras is a lightweight vidicon camera priced to permit many schools and universities to



add the system to their classroom aids. The 16-pound camera is wired directly to conventional television receivers and through the use of junction boxes, an unlimited number of receivers may be connected to as many as five vidicon-type TV cameras. A 23-inch receiver and a 17-inch TV monitor are available for use in the direct-wire system. The receivers may also be used to view conventional programs. The new Argus equipment is light weight, easy to operate and maintain, and the simplified controls can be operated by a layman after reading the instructions. **Argus Audio-Visual Systems, Sylvania Electric Products Inc., Ann Arbor, Mich.**

For more details circle #409 on mailing card.

Versatile Mobile Unit Converts To Stage, Riser or Bandstand

A mobile unit which can be easily and quickly set-up for use as a stage, riser, reviewing stand or combination is available



in the new Band Wagon developed by Wenger. It facilitates the transporting of musical groups, is easily moved to any location by hitching it to a car, truck or tractor, and folds into a completely enclosed trailer. Music is evenly projected over a wide and deep area through the shell design. Optional equipment includes music stands, chairs, generator for lighting system, public address system, podium and extra folding units. **Wenger Music Equipment Co., Owatonna, Minn.**

For more details circle #410 on mailing card.

Booksized Anatomical Chart Shows Male and Female

Printed in Western Germany, the "Minder" booksized anatomical chart is now available in the United States. The manikin shows the male and female body with explanatory index attached. Eight individual color plates, 15 inches high, show front and rear views of body, skeleton, muscles, nervous system and blood circulation. Illustrations of body organs are pictured in



an overlapping manner to be seen from front or back. **Otto Marschuetz, Importer, 3141 Sheffield Ave., Chicago 14.**

For more details circle #411 on mailing card.

Universal Pan Support Angle for Food Service Cabinets

Various sized steam table, roasting, and bun pans as well as service trays can be carried interchangeably without changing pan support angles with the new Universal Angle recently introduced. Use of the new Cres-Cor Universal Angles in a cabinet or rack simplifies storage or transportation of foods in original pans, as well as on service trays. The Universal angles are readily removable and adjustable on 1½-inch centers. **Crescent Metal Products, Inc., 18901 St. Clair Ave., Cleveland 10, Ohio.**

For more details circle #412 on mailing card.

Comfort and Appearance in Folding Arm Chair

Attractive appearance with exceptional comfort are built into the new Clarin Deluxe 3400 Series Folding Arm Chairs. De-



signed for permanent and auxiliary seating, the roomy steel chairs are upholstered in foam rubber with naugahyde, nylon or grospoint covering fabric. The arms fold in one motion with the rest of the chair into a flat three inches for storage. **Clarin Mfg. Co., 4640 W. Harrison St., Chicago 44.**

For more details circle #413 on mailing card.

Combination Projector Doubles Light Power

The V-25-P is a new projector which handles either 35mm filmstrips or two by

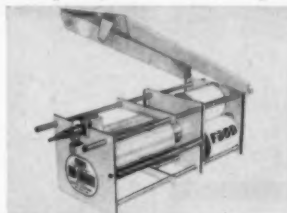


two-inch slides. The versatile unit combines a new light source with a specially designed optical system to produce twice the effective light power for improved classroom projection. Pop-up lamp ejection facilitates changing without the possibility of burns. A new venturi-style lamp housing in the new super-cooling system permits unlimited showing time. **Viewlex, Incorporated, 35-01 Queens Blvd., Long Island City 1, N.Y.**

For more details circle #414 on mailing card.

Air-Operated Machines Crush Metal Food Containers

Empty food containers and other metal cans are quickly crushed for disposal

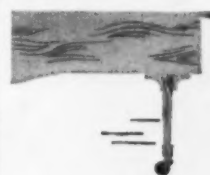


one-seventh of their original size with the new Kan Crushers. The air operated machines are available in a variety of capacities and automatically crush cans when lids are closed or removed. **Coats Company, Fort Dodge, Iowa.**

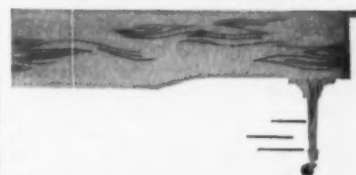
For more details circle #415 on mailing card.

(Continued on page 96)

MOVE



TEACHING



MATERIALS



MORE



EASILY!

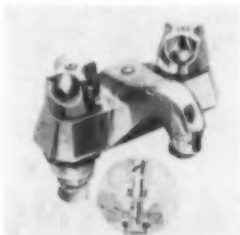
Modern teaching methods call for plenty of movement of everything from grand pianos to machine tools to exhibits and displays.

Bassick casters add conveniences as well as sure protection for floors of all types. o.11

THE BASSICK COMPANY,
Bridgeport 5, Conn.
In Canada: Belleville, Ont.



Lavatory Fitting Has Kel-Win Self-Seating Closure



The Kel-Win Self-Seating closure is used in the new heavy duty four-inch center set combination lavatory fitting for use in washrooms, dormitories and other areas with heavy traffic. The Kel-Win closure operates by a cam and straight-lift piston action which permits water flow at any desired level with automatic final closing and seating. Before a half turn is made to close the faucet, the vertical piston and stem are in "free" position and a spring takes over to close and seat the valve which is assured of a positive and permanent seal by water pressure pushing up against the bottom. The new lavatory fitting is modern in appearance and attractive in design. Kel-Win Mfg. Co., Inc., 2031 W. Clay St., Richmond 30, Va.

For more details circle #416 on mailing card.

Mobile Language Laboratory Is Self-Contained Unit

All the components for a language laboratory or for speech teaching are contained

in the MT-7C mobile unit, which also may be used to provide music for special classes or for recreation. Mounted on four-inch wheels for ready mobility, the versatile unit features a dual-head tape recorder, built-in mixer, four-speed record player, microphone, and six headsets, each with its own volume control. Pre-recorded tapes may be used, or the teacher can make his own



tapes. The mobile units permit turning any classroom into a language laboratory. Mobile-Tronics, 1703 Westover Rd., Morrisville, Pa.

For more details circle #417 on mailing card.

Square Twin Coffee Urns Fully Redesigned

The completely redesigned line of square twin coffee urns by Seco is available in three and five-gallon capacities, in both the thin line and the short line styles. A stainless steel lock screw in the bottom of the

liner is removed to permit the entire assembly to be lifted out for easy cleaning of lime deposits or sedimentation. Liners are of one-piece, deep drawn stainless steel and the entire body has all seams welded. Both gas and electric models are included in the line which can be kept spotlessly clean with minimum effort. Seco Company, Inc., 4560 Gustine Ave., St. Louis 16, Mo.

For more details circle #418 on mailing card.

Positive Vacuum System in Statler-Petoskey Floor Sander

A powerful new type vacuum system that pulls all sanded particles into a bag without dust, is a feature of the new Statler-Petoskey Floor Sander. No edging equipment is needed as the machine sands flush with moldings. The thin sanding



pads are reversible and easily snapped off. The sander is easy to operate, can be carried, and the functional design permits the handle to be swung to either side in use. Statler-Petoskey Corp., 20356 Grand River Ave., Detroit 19, Mich.

For more details circle #419 on mailing card.

If you are responsible for equipping or renovating a RESIDENCE HALL you need our specialized service

Our staff of skilled Architects and Interior Designers, after a thorough study and analysis, will assist the College and its Architect in a coordinated program of planning Residence Hall dormitory space, built-in furniture and interior decoration. A few examples of Hilliard planning are listed at the right. We'll be glad to tell you more upon request.

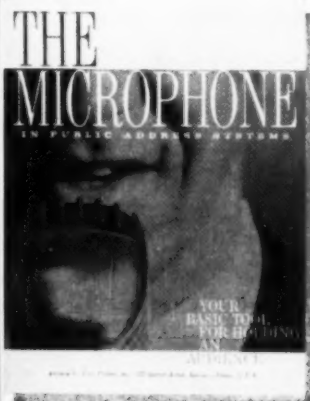
Men's and Women's
Dormitories
Oregon State College
Student Union
Building
University of New
Mexico
Student Center
Portland (Oregon)
State College
Housing Units
University of Utah
Men's Dormitory
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A basic guide to mastering microphone technique. Tells how to get your message across most effectively. Invaluable guide to the correct selection of microphones for improving public address systems.

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Manufacturers of the world-famous Unidyne Microphone
...the most requested microphone among professional speakers

Electronic Air Cleaner in "Room Size" Model

A portable, plug-in "Room Size" model is now available in Electro-Air electronic air cleaners. It requires no water or drain connections, is light enough to be moved from room to room, and removes smoke, pollen, dust, dirt and other airborne particles. **Electro-Air Cleaner Co., Inc., Olivia & Sproul Sts., McKees Rocks, Pa.**

For more details circle #420 on mailing card.

Internal Filter on Heavy Duty Master Vac

The new Model P-1008 heavy duty Master Vac is redesigned to provide a new internal filter while maintaining high efficiency. The patented pleated filter supplies maximum filtering area and the new

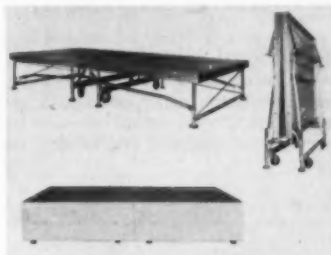


machine is adaptable to wet or dry cleaning with a powerful blower and a portable shoulder vacuum. Large rubber tired wheels and center swivel caster make the machine easy to handle. **Premier Co., 755 Woodlawn Ave., St. Paul 16, Minn.**

For more details circle #421 on mailing card.

Portable Stages and Chair Stands Built to Grandstand Safety

Offered in modular sections, the new and complete line of Sico portable stages and chair stands is built to public grandstand safety codes. All units are custom designed for flexibility and are interchangeable. They are constructed for locking together to produce platforms of various sizes and shapes to meet institutional needs.



Designed to fold for compact storage, the new mobile staging incorporates a unitized steel framework coupled with a folding design that conserves space and labor. **Sico Mfg. Co., Inc., 5215 Eden Ave. S., Minneapolis 24, Minn.**

For more details circle #422 on mailing card.

Eye-Wash Fountain Available in Wall-Mounted Model

Instant first aid for eye contamination by chemicals, caustics or foreign particles is provided by the Model 7450 emergency eye-wash fountain. The wall-mounted unit

is finished in stainless steel and has a quick-opening lever handle valve which activates



twin chrome plated fountain heads that direct streams of water into the eyes. Water pressure and volume are automatically controlled by Haws regulators. **Haws Drinking Faucet Co., Fourth and Page Sts., Berkeley 10, Calif.**

For more details circle #423 on mailing card.

Ease of Installation With Improved Bolta-Wall

No special tools are needed to apply the improved vinyl Bolta-Wall tile to any surface generally suited for wallpaper, including ceilings. A special non-staining adhesive applied to the wall provides a virtually unbreakable bond. Bolta-Wall is easily cleaned with a damp rag, its colors will not fade and it is available in a wide range of patterns. **The General Tire & Rubber Co., 1708 Englewood Ave., Akron 9, Ohio.**

For more details circle #424 on mailing card.

(Continued on page 98)

THONET



since 1830 makers of furniture for public use

chair 1401



write for illustrated material.

THONET INDUSTRIES INC.

One Park Avenue, N. Y. 16, N. Y.

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designed by
Ursula MEYER*



BTC Wall Rack Holds Four Folding Chairs

A single compact package of folding chairs makes a convenient and handy unit

in offices, meeting rooms, classrooms and other areas where limited extra seating may be required. The BTC Chair Four-Pack contains four new BTC folding chairs and an all-steel, chrome-plated wall rack which can be attached behind a door, in a closet, or on the wall of a room. The chairs are within easy reach but hang against the wall and off the floor for ease of cleaning. The rack arms fold flat when chairs are in use.

Brewer-Titchener Corp., Cortland, N.Y.

For more details circle #425 on mailing card.

Lasticolor Vinyl Spray Renews Furnishings

Lasticolor is the name given to a new formula vinyl spray designed to renew and restore various synthetic and natural ma-

terials, such as nylon, rubber, cotton, canvas, leather, plastic, wood and the like. The product actually impregnates fabrics and synthetics with a lasting vinyl coating which is available in a choice of fourteen shades. It does not change the texture of the material but adds water repellency and retards soiling. **Taussig Paint Sales Co., Old York Rd., Jenkintown, Pa.**

For more details circle #426 on mailing card.

Steel Teachers Desk Has Plastic Top

Single and double pedestal teachers desks with attractive, durable plastic tops



are now available in the Honor line. Sturdily constructed of steel, the desks have modern styling with top extension for conference. Overall locking is controlled through the center drawer. The desks are offered in gray or blue, with coral, yellow, spruce or sandalwood drawer fronts and back panels. **The H-O-N Co., Muscatine, Iowa.**

For more details circle #427 on mailing card.

Cleaver-Brooks Line Adds Three Packaged Boilers

Three packaged fire tube boilers in 400, 500 and 600 h.p. sizes have been added to the Cleaver-Brooks line. Especially suited to heating and processing steam or hot water for larger type schools and school buildings, the new boilers feature four-pass forced draft construction, readily opened doors for easy tube removal, rotary air damper and fuel flexibility for simple changeover from oil to gas on combination units. **Cleaver-Brooks Co., 326 E. Keefe Ave., Milwaukee 12, Wis.**

For more details circle #428 on mailing card.

Tray and Silverware Dispenser in Stainless Steel



A portable dispenser for silverware and cafeteria trays is now available from Lincoln in stainless steel. The unit stores enough trays and silverware for serving up to 200 persons and the upper compartments also dispense straws and napkins. The convenient height is suitable for comfortable handling by children or adults. **Lincoln Mfg. Co., Inc., P.O. Box 2313, Fort Wayne, Ind.**

For more details circle #429 on mailing card.



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Freedom from machine tending is only the beginning! The new Gathermatic by Thomas Collators brings to collating the speed and accuracy of larger, more expensive equipment...at a cost unbelievably low. Write today for complete information on the many ways you can speed up your collating operation and substantially reduce your costs.

- Offers more features at a lower price than any other collator of its kind
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Thomas Collators Inc.

World's Leading Manufacturer of Collating Equipment

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Literature and Services

• A folder entitled "Velva-Sheen Gives You Constant Protection," published by the Majestic Wax Co., 1600 Wynkoop St., Denver 2, Colo., lists the fire retardant and slipproof qualities of Velva-Sheen for floor maintenance. Discussing the safety test findings of Underwriters Laboratories in its annual re-examination of Velva-Sheen, the folder also stresses economy factors in use of the product.

For more details circle #430 on mailing card.

• The attractive line of Woodridge Dormitory Furniture is illustrated and described in an eight-page catalog available from Royal Metal Mfg. Co., One Park Ave., New York 16. Diagrams of construction and layout are shown, with an attractive four-color cover picture showing possible dormitory arrangement.

For more details circle #431 on mailing card.

• How the Wheelit multiplies the usefulness of audio-visual equipment is discussed in a new leaflet prepared by Gruber Products Co., 2223 Albion, Toledo 6, Ohio. Photographs illustrate the facility with which audio-visual equipment is handled when the Wheelit is used, and how all of the necessary equipment is carried on the mobile unit which also serves as a projection table.

For more details circle #432 on mailing card.

• Multi-Person type shower baths are described and illustrated in an eight-page bulletin available from Bradley Washfountain Co., 2203 W. Michigan St., Milwaukee 1, Wis. How "Bradley Group Showers" serve as many as five persons from one set of plumbing connections is discussed, with details of the basic Shower Column in three heights, and floor plan suggestions.

For more details circle #433 on mailing card.

• A 16-page booklet, with illustrations in full color, shows a number of new and striking decorative treatments for interior walls that can be achieved by using the new large sized ceramic tile. Booklet 910, "New Interiors With Large Size Ceramic Tile," is available from American Olean Tile Co., 1000 Cannon Ave., Lansdale, Pa.

For more details circle #434 on mailing card.

• The full line of drawing sets and equipment, instruments, materials, designing aids and measuring devices manufactured by Alvin & Co., Inc., 611 Palisado Ave., Windsor, Conn., is described and illustrated in the new Catalog and Ready Reference Chart available from the manufacturer.

For more details circle #435 on mailing card.

• A comprehensive report of a special study on "Plumbing Fixtures for Education Facilities," made by Stanford University with the support and cooperation of the Plumbing Fixture Manufacturers Association and a group of individual manufacturers, both within and outside the fixture industry, is now available at \$2 per copy through the School Planning Laboratory, School of Education, Stanford University, Stanford, Calif. The 44-page booklet covers such matters as size, type, number and location of plumbing fixtures, recommendations on pupil-to-fixture ratios, problems of maintenance, operation and supervision, and other details.

For more details circle #436 on mailing card.

• A 16-page booklet designed as "An Aid to Laboratory Fume Hood Selection" is available from Kewaunee Mfg. Co., 5023 S. Center St., Adrian, Mich. Material covered includes reasons for the use of fume hoods in the laboratory; glossary of terms; illustrations and recommendations on types of fume hoods; approved method to test fume hoods for proper operation, and fume hood operating and safety precautions.

For more details circle #437 on mailing card.

• The 1959-60 Reference Manual for Steel Equipment #487 is a 64-page guide available from Equipto, Aurora, Ill. Subjects covered include slotted angle, shelf filing, large drawer units, shelving, lockers and other storage equipment.

For more details circle #438 on mailing card.


• The "Specification Manual for Northern Hard Maple, Beech and Birch Flooring," available from the Maple Flooring Manufacturers Assn., 35 E. Wacker Drive, Chicago 1, lists physical characteristics and available lengths of this type of flooring.

For more details circle #439 on mailing card.


• "Scientific Floor Care" is the subject of an eight-page manual developed by Multi-Clean Products, Inc., 2277 Ford Pkwy., St. Paul 16, Minn. Based on use of the right material, the right equipment with the right technic, the brochure describes machines and supplies, with full details, including data on the type of material for each job to be done.

For more details circle #440 on mailing card.

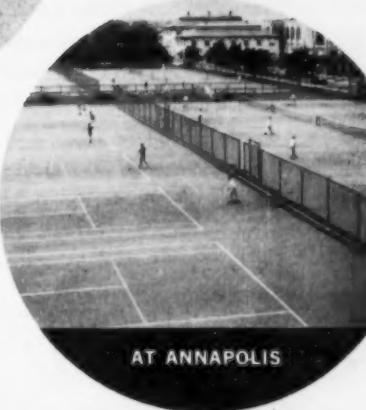
(Continued on page 100)




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AT ANNAPOLIS



AT WEST POINT

When it comes to tennis courts the armed services of our country are truly unified — they are in accord in selecting Laykold all-weather courts. In addition, a recent survey reveals that these same minimum-maintenance courts are installed on 65% of the military posts and bases, nationwide.


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information



MASURY-YOUNG CO.
76 Roland Street Boston 29, Massachusetts
OFFICES IN PRINCIPAL CITIES

• "Facts on B.F. Goodrich 'Airpath' Cushioned Rubber Floor Tile" are presented in a new booklet available from The B. F. Goodrich Co., Flooring Products, Watertown, Mass. Properties, features and numerous types of applications for the cushioned rubber floor tile are discussed, and an acoustical properties chart for various floor tiles is included, as well as other technical data.

For more details circle #441 on mailing card.

• "School Seating, Tables, Desks and Auditorium Seating" are described and illustrated in a new catalog published by Irwin Seating Co., 1480 Buchanan S. W., Grand Rapids, Mich. Included in the brochure are descriptions of Irwin's new 3/R Line of school seating, standard models and theater and auditorium seating.

For more details circle #442 on mailing card.

• Catalog No. 159, available from the Faultless Caster Corp., Dept. PR-74, Evansville 7, Ind., contains illustrations, descriptions and specifications on the complete line of Faultless casters, including spring-action, V-grooved, grease-sealed, scaffold and furniture casters, as well as sockets and glides.

For more details circle #443 on mailing card.

• Chemclad Movable Partitions with plastic laminate faces are described in a new folder available from Bourne Mfg. Co., 1573 E. Larned, Detroit 7, Mich. Sketches illustrate a typical section of the partitions and line drawings and photographs show suggested uses. Specifications are also included.

For more details circle #444 on mailing card.

• Stainless steel plaques, memorials, dedication and other signs are illustrated and described in a new brochure available from Massillon Plaque Co., 819 Danner Court, N. E., Massillon, Ohio. Photographs, art work or anything that can be photographed may be reproduced accurately on the plaques.

For more details circle #445 on mailing card.

• Color in Windows and Curtain Walls is the subject of Data Sheet 111 available from E. K. Geyser Co., 915 McArdle Roadway, Pittsburgh 3, Pa. The Geyser Barcolor System of applying permanent color to aluminum windows and curtain walls for attractive appearance and improved weathering characteristics of exposed systems is described.

For more details circle #446 on mailing card.

• Housekeeping and other custodial trainees receive information on proper floor mopping techniques, choosing correct cleaning solutions and helpful safety hints through Bulletin H, a colorful, cartoon-type bulletin board poster available from National Sanitary Supply Assn., 159 N. Dearborn St., Chicago 1.

For more details circle #447 on mailing card.

• The comprehensive 1960 Educational Motion Pictures Catalog of films available through the Audio-Visual Center, Indiana University, Bloomington, Ind., is now available. The 664-page book lists approximately 6000 films of cultural, social and educational value, recommended for use from nursery school through college and adult levels.

For more details circle #448 on mailing card.

• Bulletin No. 1301B describes the new Dunham-Bush unit heater line for steam and hot water heaters. Capacity data, conversion factors, basic formulas, piping arrangements and quietness levels are discussed and construction details and specifications for these heaters are given in the bulletin available from Dunham-Bush, Inc., West Hartford, Conn.

For more details circle #449 on mailing card.

• A 16-page booklet, written for high school and college freshmen chemistry students, is available from United States Steel Corp., Public Relations Dept., 71 Broadway, New York 6. Divided into seven major sections, the booklet, "Principal Alloying Elements in Steel," gives educational data and ends with questions and answers and a problem in mathematics.

For more details circle #450 on mailing card.

• "Industrial Floors: How to Clean and Care for Them," available from Oakite Products, Inc., 118A Rector St., New York 6, describes methods of sanitizing, stripping wax and paint, and cleaning all types of institutional floors.

For more details circle #451 on mailing card.

• "Vermarco Panel-Wall" is the topic of a new brochure published by Vermont Marble Co., Proctor, Vt. Specifications and details are given on flush-mount, grid-wall and window-wall marble panels, and drawings illustrate installation procedures.

For more details circle #452 on mailing card.

• "Technical Data on Kalwall Translucent Structural Panels" for spandrel, curtain, window or interior walls as well as structural roofs is available from Kalwall Corp., Manchester, N.H.

For more details circle #524 on mailing card.

• Five Pointer System lesson manuals are now available from Thomas Organ Co., Sepulveda, Calif., or Pointer System, Winoona Lake, Minn. The manuals cover a widely accepted method for teaching organ.

For more details circle #525 on mailing card.

Suppliers' News

American Desk Mfg. Co., Temple, Texas, manufacturer of school and classroom furniture, announces the construction of a manufacturing and warehouse addition to accommodate a new line of auditorium and stadium seating.

Green Mfg. Co., manufacturer of food handling equipment, announces the removal of its plant and offices from Chicago to a new modern building at 1900 Pratt Blvd., Elk Grove Village, Ill.

Hamilton Mfg. Co., Two Rivers, Wis., manufacturer of science laboratory and other teaching equipment, announces purchase of the assets of the Haldemann-Homme Mfg. Co. of St. Paul, Minn., manufacturer of Erickson portable folding tables, stages and choral risers.

Radio Corporation of America, Educational Services, Camden, N.J., announces a special educational price on color television receivers for high schools and colleges, tying in with the NBC announcement that "Continental Classroom," a two-semester televised course in modern science, includes colorcasting of a course in Modern Chemistry.

INDEX TO ADVERTISEMENTS

USE THIS PAGE TO REQUEST PRODUCT INFORMATION

The index on this and the following page lists advertisements in this magazine alphabetically by manufacturer. For additional information about any product or service advertised, circle the manufacturer's key number on the detachable postcard and mail it. No postage is required.

Products described in the "What's New" pages of this magazine also have key numbers which appear in each instance following the description of the item. For more information about these items, circle the appropriate numbers on the postcard and mail it, without postage, to College & University Business

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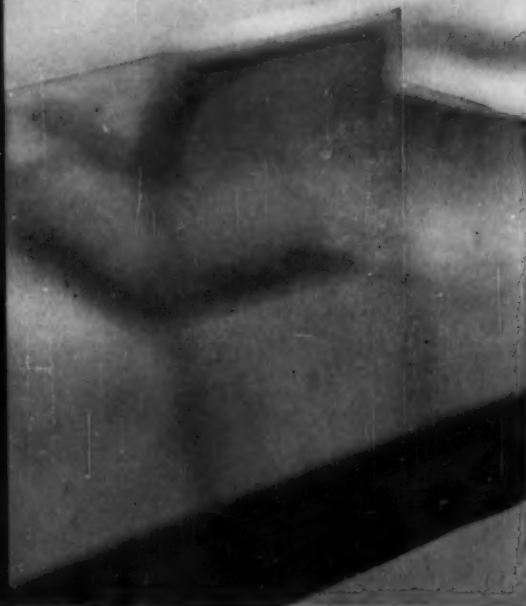
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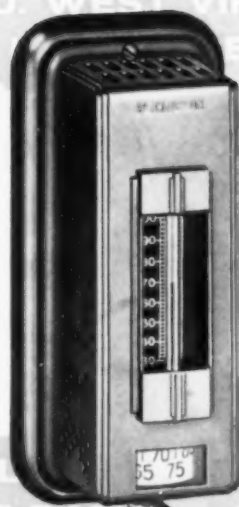
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